TECHNICAL MANUAL
WEIGHT INDICATOR

E-AF08: PROGRAM VERSION FOR WHEEL AND AXLE WEIGHING

WHEEL WEIGHING SYSTEMS

SCALE n°1   SCALE n°2

B1= 1000 kg	B2= 1000 kg
X= 1,74 m	Y= 1,87 m
B3= 1000 kg	B4= 1000 kg

CENTRE OF GRAVITY

SCALE n°3   SCALE n°4
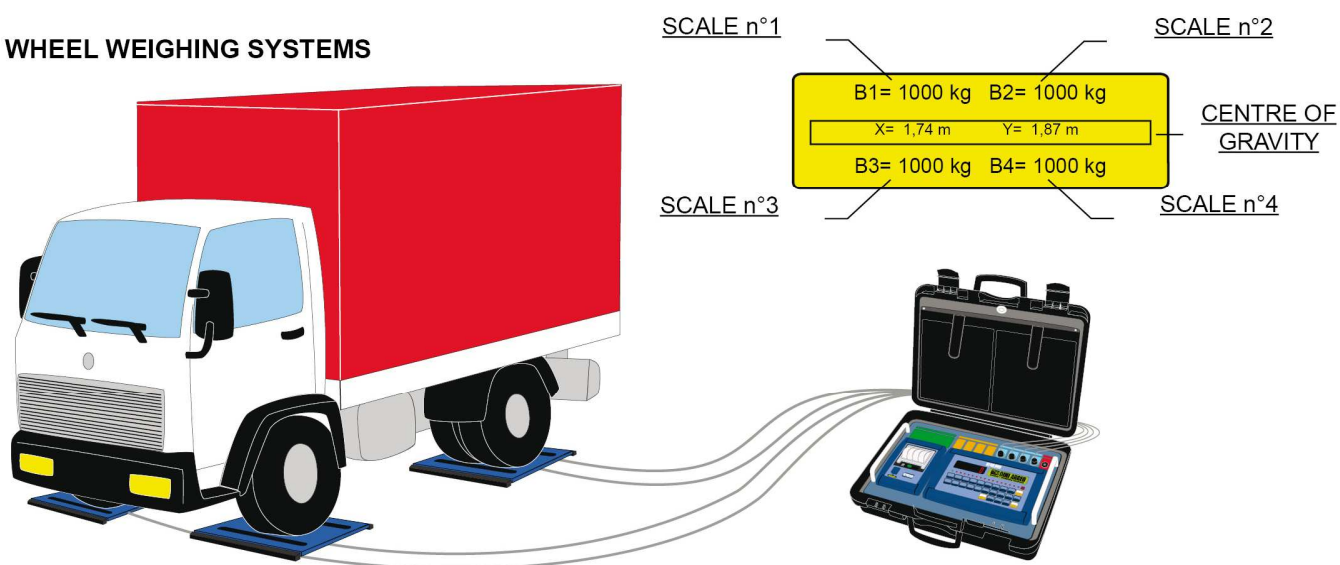
3590EKR, 3590EXP, 3590EXT series indicator

INDEX

1. REQUIREMENTS FOR AN OPTIMAL INSTALLATION

To obtain the best results it is recommended to install the indicator and the platform (or transducer) in a place with the following conditions:

A flat, level surface on which to rest.

Stable and vibration free.

No dust or strong vapours.

No draughts.

Make sure the platform is level or that the loading cells are resting evenly.

Moderate temperature and humidity (15-30°C and 40-70%).

Do not install anywhere where there is the risk of explosion.

All the indicator connections have to be made respecting the rules applicable in the zone and in the installing environment. Respect the recommended electrical precautionary measures described in section "ELECTRICAL PRECAUTIONARY MEASURES".

Make sure that the grounding is made correctly, see section "EARTHING SYSTEM".

Everything not expressly described in this manual has to be considered as improper use of the equipment.

Avoid welding with load cells installed.

Use waterproof sheaths and couplings in order to protect the load cell cables.

Use a waterproof junction box to connect the cells.

1.1 ELECTRICAL PRECAUTIONARY MEASURES

Mains power supply is restricted to within ± 10% of the rated voltage.

Electric protections (fuses etc.) are provided by the technician installing the instrument.

Respect the recommended minimal distances that are mentioned for the various cable categories, see sections "CABLE CLASSIFICATION" and "RECOMMENDED DISTANCES AMONG CABLES".

The extension leads of the load cells or signal amplifiers, used for the connection of the serial ports and analogue output must be within the allowed maximum lengths, see section "MAXIMUM CABLE LENGTH".

The extension leads of the load cells or signal amplifiers must be screened. In addition they must be laid on their own in a raceway or metal pipe as far away as possible from the power supply cables.

Install "RC" filters on the contactor coils, on the solenoid valves and on all devices producing electric disturbances.

If it is possible that condensation could form inside the weight transmitter it is advisable to leave the instrument powered at all times.

Every shielded cable or not (for instance PC cable, cell cable, power supply cable) connected to the indicator should be as shorter as possible, then you have to come out of the shield the minimum length of cable, then connect to the terminal box.

If the indicator is situated inside an electric panel, the power supply cable should be a shielded cable as shorter as possible, distant from every coil supply cable, inverter, electromotive force, etc. and in addition dedicate an uncoupler transformer in order to feed the indicator only.

1.1.1 CABLE CLASSIFICATION
The various cables are classified depending on the transmitted signals:

Category I
- Field bus, LAN (PROFIBUS, Ethernet, Devicenet…)
- Shielded data cables (RS232 …)
- Shielded cables for analogue/digital signals < 25V (sensors, load cells…)
- Low tension power supply cables (< 60V)
- Coaxial cables

Category II
- DC supply cables with tension > 60V and < 400V
- AC supply cables with tension > 25V and < 400V

Category III
- Power supply cables with tension > 400V
- Telephone cables

Category IV
- Any cable subject to lightning

1.1.2 RECOMMENDED DISTANCES AMONG CABLES
- When the cables are laid next to each other, these must be at the distances in the table below
- These distances are valid if in the air; these are reduced if the raceways are separated by grounded metallic shields.
- Different category cables can cross each other (90°)

Category I	Category II	Category III	Category IV
≥ 100 mm			
≥ 200 mm			
≥ 500 mm			
	≥ 100 mm		
	≥ 500 mm		
		≥ 500 mm	

1.1.3 MAXIMUM CABLE LENGTH

LOAD CELL CABLE
The maximum reachable length from the line using the appropriate load cell cable is:
- 50 m with cable 6 x 0,25 mm^2
- 100 m with cable 6 x 0,5 mm^2

RS232 CABLE
The maximum reachable length from the line using the RS232 cable with a maximum baud rate of 19200, is about 15 m.

RS485 CABLE
The maximum reachable length from the line with the use of the appropriate cable for RS 485 connections (see section "RS 485 CONNECTION"), is about 1200 meters.

ANALOG OUTPUT CABLE
The maximum length of the analogue output cable in current is:
- 100 m with cable 2 x 0,25 mm^2
- 150 m with cable 2 x 0,5 mm^2
- 300 m with cable 2 x 1 mm^2
The maximum length of the analogue output cable in voltage is:
- 50 m with cable 2 x 0,25 mm^2
- 75 m with cable 2 x 0,5 mm^2
- 150 m with cable 2 x 1 mm^2

1.2 EARTHING SYSTEM

For the right earthing and the optimal functioning of the system, it is necessary to connect the indicator, the load cells, the possible junction box and the weighing structure to the earth.
All earthing cables must have the shortest possible length in order to minimize their resistance.

INDICATOR
Connect the external earthing of the indicator to the earth through copper cables having at least a 16 mm^2 cross-section.

LOAD CELLS AND JUNCTION BOX
The earthing must be done by connecting the earthing cables to a ground bar with cables having a cross-section of at least 16 mm^2 and by connecting the ground bar to a ground pole with a cable having a cross-section of at least 50 mm^2.

- In the case the load cells are connected to the indicator through a junction box, it is necessary to connect the sheathing both of cells cables and of indicator cable to the earthing of the junction box (refer to the junction box manual) and connect this to the earth through copper cables having at least a 16 mm^2 cross-section.
- If the load cells are connected directly to the indicator (without the use of the junction box), one should connect the shieldings of the load cell cables to the grounding point (or earthing bar) inside the container.
- If the weighing system concerns large and/or outdoor structures, like weighbridges, and the junction box is connected to the indicator in a distance that is greater than 10 m, or in the presence of noise, the cable shield must be earthed both in the junction box and in the indicator, and the two ground leads must be connected with an earth cable having a cross-section of at least 16 mm^2.

WEIGHING STRUCTURE
Connect the weighing structure and the possible connected structures (for example silos that release material on the weighing structure) to the earth through copper cables having at least a 16 mm^2 cross-section.

Furthermore it is necessary that for each cell, one connects the upper part with the lower part of the load cell through a copper braid section not less than 16 mm2; the upper part must be short-circuited with the surface of the weighing structure and the lower part must be grounded through a copper braid section not less than 16 mm^2.

CONNECTED SERIAL CABLES AND INSTRUMENTS
Connect the shield of the serial cable at the grounding point (or grounding bar) inside the container (on the end of the cable toward the indicator) and at the earth connection of the connected instrument (on the end of the cable toward the indicator), and ground the earth connection of the connected instrument, through a copper cable section not less than 16 mm^2.
To avoid possible side effects, the earth references of the connection and power supply cable of the indicator and of the connected instrument **must be at the same potential**.

GENERAL NOTES:

- All the grounding cables must have an adequate length, in order to obtain **an overall resistance of grounding system less than 1 Ω**.

- In the case the weighing system regards great and/or outdoor structures, like weighbridges:

  - The grounding connection is to be made by connecting the grounding cables to a grounding bar and the grounding bar to the grounding pole with a cable section not less than 50 mm^2.

  - the cable cross-section must be greater (for example 50 mm^2 instead of 16 mm^2 and 100 mm^2 instead of 50 mm^2), because the voltage into play is greater (for example thunderbolts);

  - the ground pole must be positioned at a distance of at least 10 metres from the weighbridge structure;

  - one needs to open the SENSE inside the indicator in order to offset the drifts due to the increase in temperature.

- One should check and remove, if necessary, the connection between the earth and the neutral wire of the electrical installation.

EARTHING EXAMPLE WEIGHBRIDGE

U-BOLT BETWEEEN PLATE UNDER CELL AND WEIGHBRIDGE (NOT SUPPLIED)

WEIGHBRIDGE

LOAD CELL

PLATE UNDER CELL (NOT SUPPLIED)

JB8Q POSITIONED ON THE WALL SURROUNDING THE PIT

Ø 8 (50 mm² section)
Ø 11,3 (100 mm² section)
EARTH CABLES (NOT SUPPLIED)

GROUND POLE POSITIONED UNDER OR NEAR WEIGHBRIDGE (NOT SUPPLIED)

COPPER HOLED PLATE ON THE SURROUNDING WALL (NOT SUPPLIED)
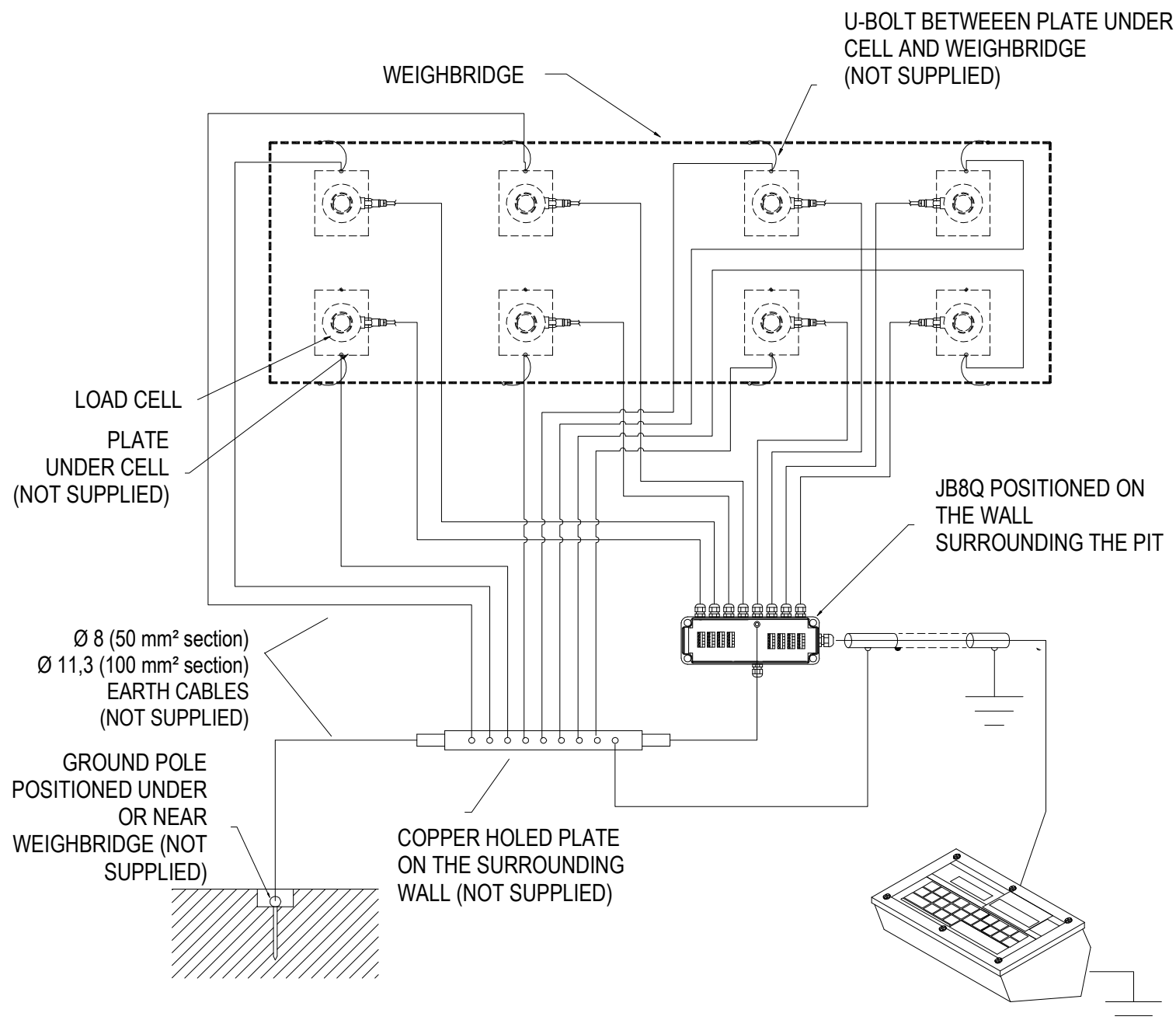
EARTHING EXAMPLE OF A SILO

Non weighing
structure (silo)

U-bolt between
plate under cell
and weighing
structure (not
supplied)

Weighing
structure

Load cell

Ø 4,6 – 16 mm²
earth cable
section (not
supplied)

Ø 8 – 50 mm²
earth cable
section (not
supplied)

Junction
box
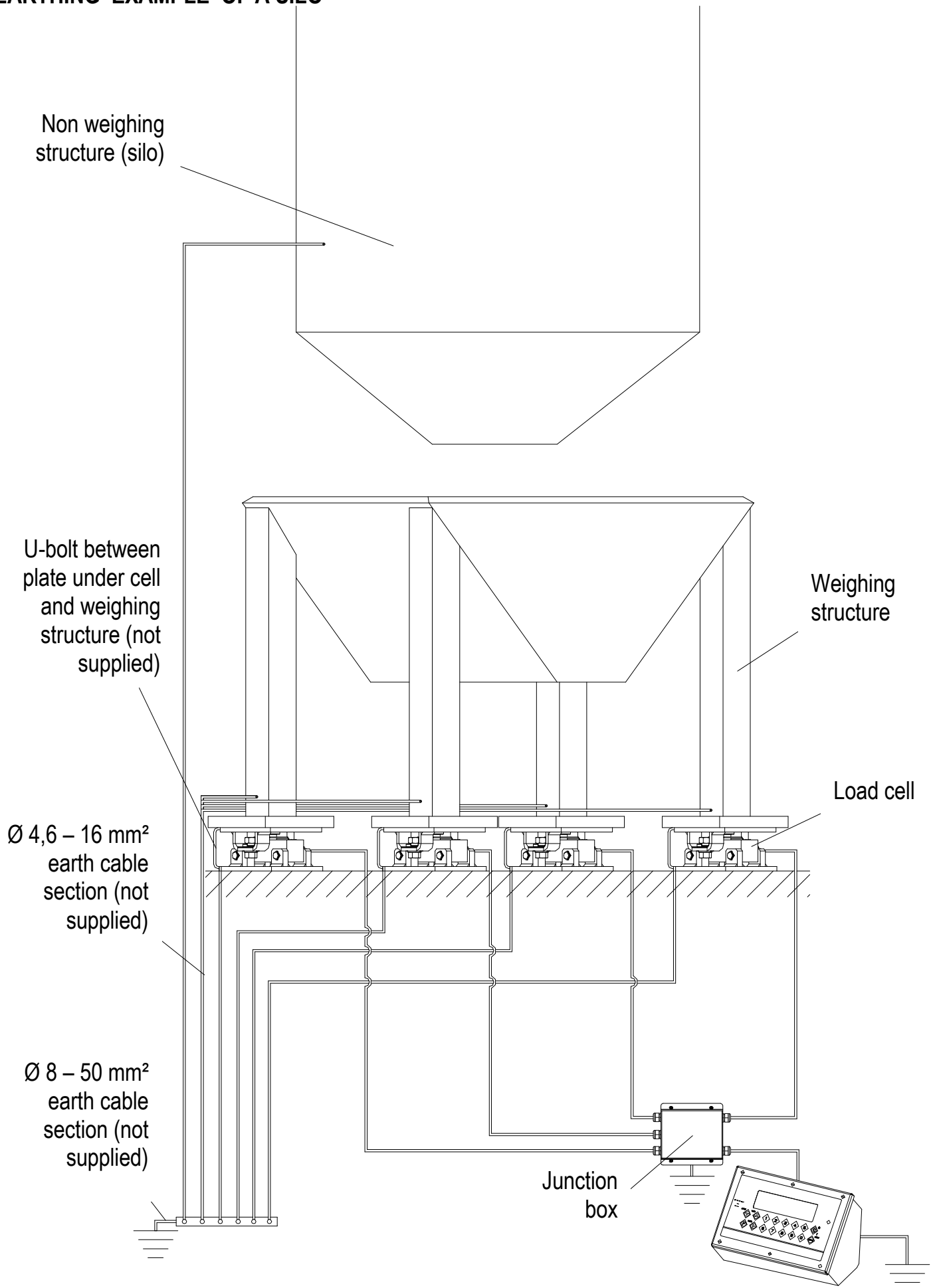
2. CONNECTION TO THE LOAD RECEIVER

2.1 ANALOG LOAD CELLS

IMPORTANT: Respect the electrical precautionary measures indicated in section "REQUIREMENTS FOR AN OPTIMAL INSTALLATION".

After having followed the instructions regarding the platform or the load receiver, the screened cable leading from the load cell(s) must be connected to the instrument through the CELL1 terminal board and the CELL1, CELL2, CELL3, CELL4 connectors; see section "ELECTRICAL SCHEMES".

The terminal board of the instrument may be connected to the 6-wire load receiver (with use of SENSE), or simply 4-wire; for this, through jumper J7 and J8 it is possible to choose whether to short-circuit the SENSE with the POWER SUPPLY (jumpers closed) or not (jumpers open).

The SENSE allows compensating for any drops in voltage in the part of the cable that connects the instrument to the transducer. It is useful when the distance between the indicator and the transducer is greater than 10 m.

The 4-pin connectors instead allow just the 4-wire connection.

To make the connection qualified personnel must open the instrument (see terminal board connections section "ELECTRICAL SCHEMES").

TAKE NOTE: if there is just one LOAD RECEIVER, it is possible to make a 6-wire connection (use of sense) directly with the terminal board, removing the J7 and J8 jumpers.

If there are two or more LOAD RECEIVERS, one should close the J7 and J8 jumpers (sense and power supply are short-circuited) and make the 4-wire connection.

Normally the indicator comes already connected to the platform and is ready to use. If this is a LEGAL version instrument, access to the connection will be subject to a legal SEAL.

Follow the instructions for preparing the platform for use.

AMP 4 CONNECTOR
1. **EXC +** POWER SUPPLY +
2. **EXC -** POWER SUPPLY -
3. **SIG +** SIGNAL +
4. **SIG -** SIGNAL -

TERMINAL
25. **SIG +** SIGNAL +
26. **SIG -** SIGNAL -
27. **SEN +** REFERENCE +
28. **SEN -** REFERENCE -
29. **EXC +** POWER SUPPLY +
30. **EXC -** POWER SUPPLY -
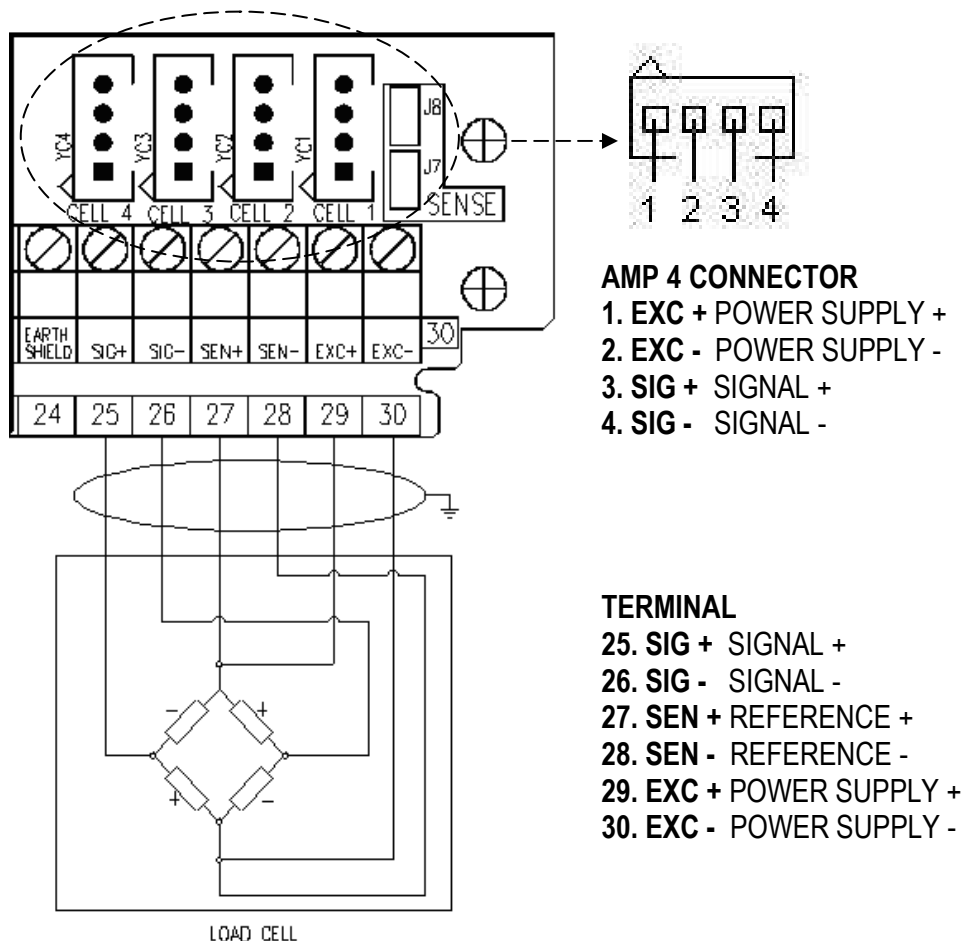
See section "ELECTRICAL SCHEMES" for further information.

2.2 DIGITAL LOAD CELLS

IMPORTANT:
- **Respect the electrical precautionary measures indicated in section "REQUIREMENTS FOR AN OPTIMAL INSTALLATION".**
- **Read carefully and apply what is described in chapter "RS 485 CONNECTION".**

After having followed the instructions regarding the platform or the load receivers, the screened cable leading from the load cell(s) must be connected to the instrument through the COM3 RS485 terminal board.
Below is the RS485 connection for digital load cells in the CoM3 of the indicator:
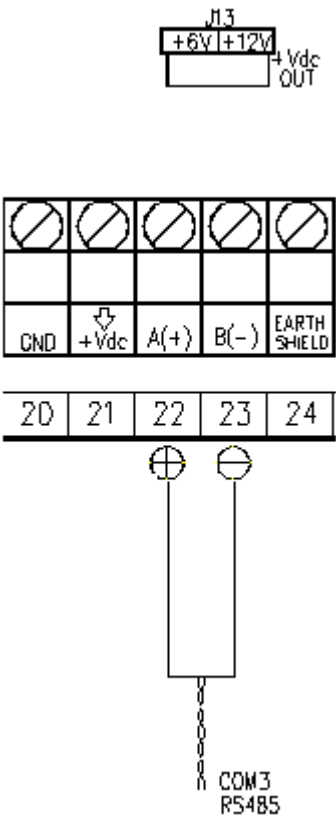
TERMINAL	MEANING
20. GND	POWER SUPPLY -
21. +Vdc	POWER SUPPLY +
22. TX+/RX+	Line 485 A(+)
23. TX-/RX-	Line 485 B(-)

The voltage value of terminal 21 can be selected through J13 jumper, according to the required load cells power supply.
The possible selections are 6V or 12V, working if the relative power supply is connected to the indicator (respectively battery or external power supply, see J13 jumper description in section "MOTHER BOARD").
Consequently, the functioning with only the battery doesn't allow the connection of those digital load cells that require 12V power supply.

In the case of digital load cells connected to a digital junction board, connect the COM3 RS 485 terminal board of the indicator to the RS485 port of the junction board, by following the relative manual and the section "RS 485 CONNECTION".

In the case of ring connection of more digital junction boards or DGX, connect the COM3 RS 485 terminal board of the indicator to the RS485 port of the first junction board/DGX, by following the relative manual and the section "RS 485 CONNECTION".

Part reserved for the Authorised Technical Personnel

3. SETUP ENVIRONMENT

By "SETUP environment" we mean a certain menu inside which all the indicator operating parameters can be set.
To enter it, turn on the instrument and, while the firmware version is displayed, press the TARE key for an instant.

The indicator shows:

1)

" tECh " for an instant on the LED display	→	ACCESS PASSWORD DISABLED	→	" LAnG " on LED display; "LANGUAGE" on LCD display	→	COMPLETE SET-UP MENU (technical personnel)

Or

2)

" uSEr " for an instant on the LED display	→	ACCESS PASSWORD ENABLED	→	"PrG.VEr" on LED display; "FIRMWARE" on LCD display	→	PARTIAL SET-UP MENU (only user)
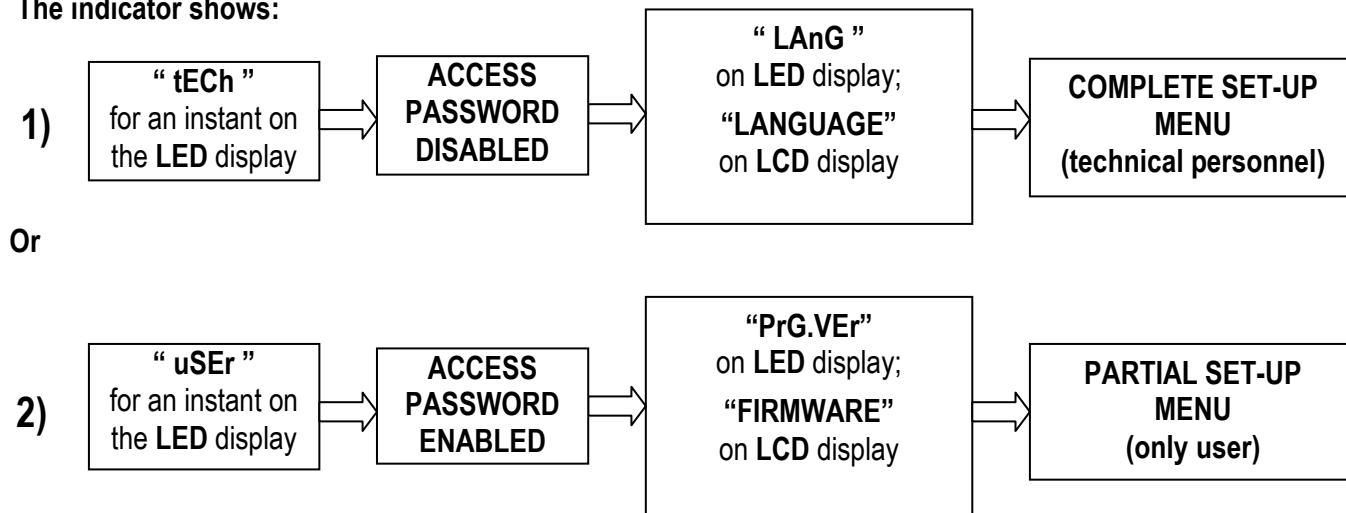
If you are in choice **2)** and you want to access the complete set-up menu one should:

Press TARE/ZERO during the visualisation of the "**uSEr**" message on the LED display	→	ENTER THE PASSWORD SUBSTITUTING THE DISPLAYED (*) RANDOM VALUE	→	PRESS "ENTER"	→	" tECh " un istante sul display LED	→	COMPLETE SET-UP MENU (technical personnel)
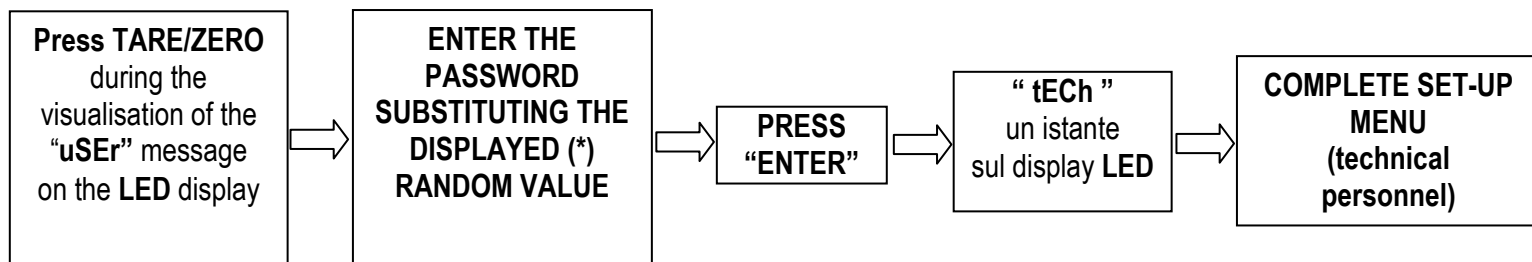
(*) If one has forgotten the password, one should communicate the display number to the manufacturer, who will supply a valid password JUST FOR THAT SPECIFIC NUMBER.

In the parameter description and in the block diagram:
- The **METRIC** parameters are shown with the **(*)** symbol**, and, with approved instrument, these may not be visible or read only. See the explanation of the parameter for the details.
   NOTE: The indicator is approved when the J1 jumper of the motherboard is closed (see the electrical scheme in the final chapter).**
- The **CONDITIONAL STEPS** are shown with the **(§)** symbol, **and are not accessible or displayed in specific conditions, shown in the step description**.
- The **DEFAULT VALUES** are shown with the **(!)** symbol placed next to the step and at the end of it.

FUNCTION OF THE KEYS IN THE SET-UP ENVIRONMENT

KEY	FUNCTION
F6, F7	Allow to scroll forwards and backwards in the menu steps or in the parameters inside a step.
Fn / ENTER	Allows to enter a step or confirm a parameter inside a step.
C / DEL	Allows to exit a step without confirming any changes made and to go to the previous level. While entering a code, it quickly zeros the displayed value.
F5	Allow print all configuration in the set-up environment (when in the main menu), or allow print only one step to the se-up environment (when in the single step desired). The display show this message "PRINT", press ENTER to confirm or C to cancel.
NUMERIC KEYBOARD	Allows entering digits or characters.

The LED and LCD displays show respectively the current parameter and its description; generally, when one exits a step the instrument places itself on the following step.

TO EXIT THE SET-UP ENVIRONMENT, PRESS THE C KEY MANY TIMES UNTIL THE INDICATOR SHOWS:

> **EXITING SETUP:**
> **SAVE ?**

CONFIRM WITH ENTER TO SAVE CHANGES MADE OR PRESS ANOTHER KEY TO NOT SAVE.

3.1 SET-UP ENVIRONMENT BLOCK DIAGRAM

The following diagram represents the structure of the indicator's set-up environment; each step has been described in detail in the paragraph "DESCRIPTION OF THE STEPS".

LAnG → (!) En, Fr, dE, ES, Gr, it

(*) nuM.SCA → (!) N.SC.1, N.SC.2, N.SC.3, N.SC.4, N.SC.5, N.SC.6, N.SC.7, N.SC.8 → CELtyP → Cells Number → DGX functioning mode (§) → SEt.485 → Number of DGX cells (§)

Analog, DGX, RCD, CCI AD, RC3D, C16i, WWS

1, 2...16

(!) J.boX, M.CELLS → XX → XX

Number of DGX (§)

Serial number

XX

XXXXXXXXXX

SETUP ENVIRONMENT → F.ModE

SEtuP

diAG. → PrG.VEr, WEiGht, MiLLiV, AdC.Pnt, diSPLA, kEyb., CtS.St, b.LEVEL, PoWEr, rELE, inPutS, Anout, SEr., SEr.nuM, P.tESt, EV.LoG

F7
C   ENTER
F6

LEGEND

= USER & TECH MENU'

= ONLY TECH MENU'

(*) = METROLOGICAL PARAMETER

(§) = CONDITIONED STEP

(!) = DEFAULT VALUE

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F.ModE

- **En.KEYS**
  - F1...F10, 0...9, POINT, TARE, Fn, 2ndF, C → (!) ENABLED, DISABLED
  - ALL ENABLED, ALL DISABLED → SURE?
- **F.KEYS**
  - F1...F10, 2nd F+F1... 2nd F+F10, Fn+F1...Fn+F10 → xxx
- **dtb**
  - AbiL.A → (!) ENABLED, DISABLED
  - En.A.FLd → DESCRIPTION 2 ... → (!) ENABLED, DISABLED
  - init. → DATABASES, ITEMS,TEXTS → YES, NO
- **totAL**
  - EXE.tot → (!) MAnuAL, ALWAYS
  - rESEt → (!) EnAbLE, diSAbL
- **LEn.uM**
  - (!) 032
  - (!) 109
- **LEn.dEC**
  - (!) 2
- **PLA.tXt**
  - (!) EN-SCALE
  - (!) FR-BALANCE
  - (!) DE-WAAGE
  - (!) ES-BALANZA
  - (!)GR-SCALE
  - (!) IT-BILANCIA
- **0.A.LiSt**
  - (!) DISABLED, ENABLED
- **rEACt**
  - (!) InStAb, PASS. 0
- **LoGo**
- **tXt**
  - CFG.tXt → In. 0 … In. 14
    - F1 → New
    - F2 → Edit
    - F3 → Delete
    - ./HELP → Help
    - F5 → Print
  - d.thrES → (!) 00 … 31
- **tXt.i**
  - tXt.i0
  - tXt.i1
  - tXt.i2
- **CLr.rAM**
  - SURE?
- **dtb.PWd**
  - (!) DISABLED
  - ENABLED → 00000 … 65534
- **tAMAG**
  - MonthS → (!) 00 … 99
  - WEiGh. → (!) 00000 … 99999
  - rESEt → SURE?

SEtuP

ConFiG

SEriAL

Anout → SCALE1, SCALE2, SCALE3, SCALE4, SCALE5, SCALE6, SCALE7, SCALE8

- SLot → (!) SLot 1, Slot 2
- ModE → (!) AoG, Aon
- AoMA → (!) 00000 … 65535
- AoZE → (!) 00000 … 65535
- AoMi → (!) 00000 … 65535

inPutS → in.1 / ... / in.8 exp → (!) None, TARE, 2nd F, Fn, POINT, C, F1 … F10, 0 … 9, PLT-0, PLT-1, PLT-2, PLT-3, PLT-4, LOC.IN, OFF, -OK- ERROR, READY, START, STOP, RL.OFF, LNG.KEY, LEVEL, R.START

outPut → r.ConF. → rL.1 / ... / rL.16

- no/nC → (!) n.o., n.C.
- onStAt → (!) drCt, StAbiL
- rL.iSt → (!) iSt.oFF, iSt.on
- rLFunC → (!) nonE, GroSS, nEt, Gro.0, nEt.0, Motion, totAL, T.W.1, T.W.2, T.W.3, nEt.nEG

r.ModE → (!) Normal, EXCLUS

inF.rEd → None, IR4, IR18, IR19, RD6, RDBR6

KEY 1, KEY 2, KEY 3, KEY 4, KEY 5, KEY 6 → (!) None, TARE, 2nd F, Fn, POINT, C, F1 … F10, 0 … 9, PLT-0, PLT-1, PLT-2, PLT-3, PLT-4, LOC.IN, OFF, -OK- ERROR, READY, START, STOP, RL.OFF, LNG.KEY, LEVEL

t.LoCK → (!) Lock, Unlock, Disable

PoW.oFF → (!) DISABLED, ENABLED

bt.StAt → (!) DISABLED, ENABLED

bACkuP → SURE? → BAK.PWD → (!) DISABLED / ENABLED → 00000 … 65534

dFLt → SURE?

(*) dFLt.t → SURE?

PWd.SEt → (!) DISABLED / ENABLED → 00000 … 65534

(*) ini.AL → SURE?

(*) d.SALE → (!) NO, YES

PC.kEyb → KEYuSE → (!) Normal, READER

LAYout → (!) ENGLISH, ELLENIKA, ITALIANO, FRANCAIS, DEUTSCH

- - - → **SEriAL**
  - **PortS** → (!) PC.Pr.AX, PC.AX.Pr, Pr.PC.AX, Pr.AX.PC, AX.PC.Pr, AX.Pr.PC
  - **CoMPrn**
    - **bAud** → (!) 9600, 1200, 2400, 4800, 19200, 38400, 57600, 115200
    - **PAritY** → (!) None, Odd, Even
    - **Word** → (!) 8 bit, 7 bit
    - **StoP b** → (!) 1 bit, 2 bit
    - **CtS.St.** → (!) LOW, HIGH, EMUCTS, XON/XOFF, NO.CTS
      - **SND.CTS (§)** → (!) DISABLED, ENABLED
    - **Err.CtS** → (!) DISABLED, ENABLED
    - **PWrPrn** → (!) PWrint, EXtoFF, PWrEXt
    - **ProtoC** → (!) norMAL, riPE 6, ALibi, Cont, MuL.riP
  - **CoM PC**
    - **bAud** → (!) 9600, 1200, 2400, 4800, 19200, 38400, 57600, 115200
    - **PAritY** → (!) None, Odd, Even
    - **Word** → (!) 8 bit, 7 bit
    - **StoP b** → (!) 1 bit, 2 bit
    - **CtS.St.** → (!) NO.CTS, LOW, HIGH, EMUCTS
    - **Add.485** → (!) 00 … 99
    - **ProtoC** → (!) StAnd, AFXX, riPE 6, riPLCd, Mondir, ALibi, SMA, ModbuS, ProFi.b, MuL.riP
    - **PC.ModE** → (!) rEquE., Cont., StAbiL, - 485 -
  - **CoMAuX**
    - **bAud** → (!) 9600, 1200, 2400, 4800, 19200, 38400, 57600, 115200
    - **PAritY** → (!) None, Odd, Even
    - **Word** → (!) 8 bit, 7 bit
    - **StoP b** → (!) 1 bit, 2 bit
    - **CtS.St.** → (!) NO.CTS, LOW, HIGH, EMUCTS
    - **rAdio**
      - (!) DISABLED
      - ENABLED → RADIO CHANNEL (0...7)
    - **ProtoC** → (!) nonE, Cont., riPE 6, riPEdC
    - **CEL.Add (§)**
      - XX
      - XXXXXX
  - **rEAdEr** → (!) DISABLE, COM.PRN, COM.AUX
  - **r71.rEP** → (!) DISABLED, ENABLED
  - **Prn.FMt** → C.F.01 … 30
  - **tErMin** → (!) LF, NO.TERM, CR, CR LF
  - **dEF.Prn**

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ConFiG → SEL.SCA → Scale 1 / Scale 2 / Scale 3 / Scale 4 / Scale 5 / Scale 6 / Scale 7 / Scale 8

EquAL (§)

PArAM.
- (*) StAbiL. (§) → SLW.0 (!)– 3, H.R.0, H.R.1, FLT 0 – 3, DYN.0 - 1, DOS.0 – 3, H.R.2 – 7, DYN.2 – 3, FLT.OFF, FLT.AV2,R.ADC D,R.ADC S, Custom
- (*) Auto 0 → (!) ENABLED → (!) 10
  - DISABLED
  - CYCLIC (§)
- (*) 0.PErC → (!) 02
- (*) 0.trACK → (!) TR.1/2, TR.1, TR.2, TR. no, TR.1/4
- (*) diV.Stb → 00, … (!) 02, ... 99

(*) GrAV → (!) 9.800655

(*) CALib.
- dECiM. → (!) 3, no, 1, 2
- u.M. → (!) - kg -, - t -, - lb -, - g -
- nuMbEr oF rAnGE → 1 / 2 / 3 → rAnGE tYPE → M.rAnGE, M.diViS
- diV. 1 → (!) 1, 2, 5, 10, 20, 50, 100, 200
- CAP.1 → (!) 100 … 999999
- diV. 2
- CAP.2
- diV. 3
- CAP.3
- CALib.P
- PointS

(*) 0.CALib

thEo.CA (§) → XXXXXX → XXXXXX

(*) AdJ.CEL (§) → XXXXXX

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3.2 DESCRIPTION OF THE STEPS

<< LAnG >> FIRMWARE LANGUAGE

Parameter	Language	Used Codepage (see section "ASCII CODE TABLE")
- **En**	English	1252 Windows Latin 1
- **Fr**	FranÇais	1252 Windows Latin 1
- **dE**	Deutsch	1252 Windows Latin 1
- **ES**	Español	1252 Windows Latin 1
- **Gr**	Ellenika	1253 Windows Greek
- **it**	Italiano	1252 Windows Latin 1

(!) En

<< nuM.SCA >> NUMBER OF CONNECTED SCALES (*)

- N.SC. 1 (1 scale).
- N.SC. 2 (2 scales).
- N.SC. 3 (3 scales).
- N.SC. 4 (4 scales).
- N.SC. 5 (5 scales).
- N.SC. 6 (6 scales).
- N.SC. 7 (7 scales).
- N.SC. 8 (8 scales).

(!) N.SC. 1

(*) In case of approved instrument the parameter is read only.

<< CELtyP >> CELL TYPE

This menu allows setting the type of cells used (analogue or digital):
- in case of digital cells it will be possible to enter the number of cells; it's possible to select the following types of digital cells: **DGX**, **RCD**, **CCI AD**, **RC3D**, **C16**i, **WWS**. Only load cells of the same model and the same capacity can compose two digital platforms.
- in case of analogue cells it will be possible to enter the number of channels.

NOTE: The instrument is able to manage up to 4 analogue channels, 16 digital cells, 24 DGX or 8 WWSRF.

Only load cells of the same model and the same capacity can compose two digital platforms.

(!) AnALoG

<< dGX.Mod >> DGX FUNCTION MODE **(§)**

- **M.CELLS**   conversion into digital of each single analogue load cell; by confirming with ENTER. one is asked to enter the number of DGX cards.
- **J.boX**   for use of the manufacturer.

Follow the instructions in the section "SETTING THE COMMUNICATION WITH DIGITAL CELLS".

(!) J.boX

(§) The step is displayed if the DGX digital cell is selected.

<< SEt.485 >> SET 485 ADDRESS **(§)**

This step allows to set the 485 address of the digital load cell / DGX. After having confirmed the value, one is asked to enter the serial number of the load cell / DGX. In the case of DGX, one is also asked to enter the number of cells connected to the DGX card.

Follow the instructions in the section "SETTING THE COMMUNICATION WITH DIGITAL CELLS".

(!) 01

(§) The step is displayed only if the selected type of digital cells allows it.
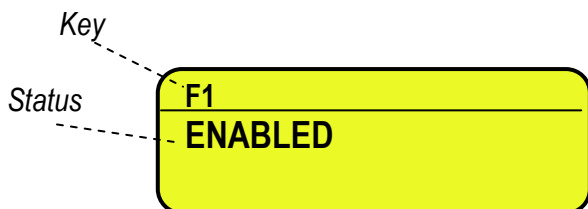
<< F.ModE >>   SCALE FUNCTIONING

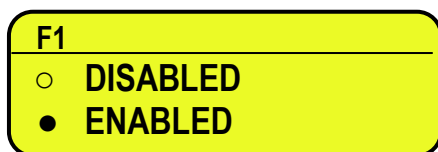## << En.kEyS >> KEYS ENABLING

It is possible to enable/disable each single key of the keyboard, as well as the following two sequences of keys:
- Fn + Fn   for access to a menu listing all functions
- 123 + Fn   for direct access to a specific function (e.g. number 123)

- select the desired key with **F6**/**F7**:

Key

Status

```
F1
ENABLED
```

- press **ENTER** to modify the setting:

```
F1
○   DISABLED
●   ENABLED
```

- Press **F6**/**F7** to select "ENABLED" (enabled) or "DISABLED" (disabled) and **ENTER** to confirm.
NOTES:
- It's possible to enable/disable all the keys together, by selecting "ENABLE ALL" or "DISABLE ALL" (the confirmation will be requested with the message "SURE?").
- The disabling of the keys will have effect only the WEIGHING PHASE, in other words, not inside the menus, databases, etc…
- The turning off of the instrument (long pressing of the **C** key) will always be enabled.
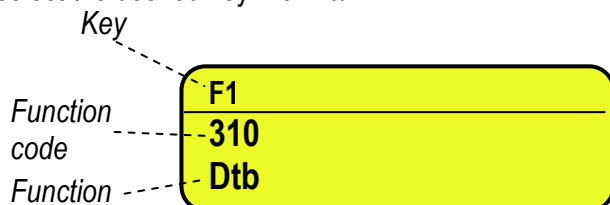- The disabling of the keys will be applied also on the PC keyboard, if connected.
(!) ENABLE ALL, included the sequence of keys "123 + Fn"
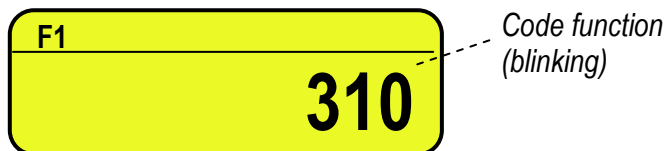
<< F.kEyS >>   FUNCTION KEYS COUPLING

It's possible to modify the function of the F1, F2…..F10 keys, and the combination of these with the **2nd F** or **Fn** keys (i.e. "2nd F + F1", "Fn + F2", etc...).

F. Keys		
	F1	Default
	F2	Preamble
	Fn	Modify
	2nd F	List

- select the desired key with F6/F7:

Key

Function code

Function

F1
310
Dtb

- press ENTER to modify the setting:

F1

310
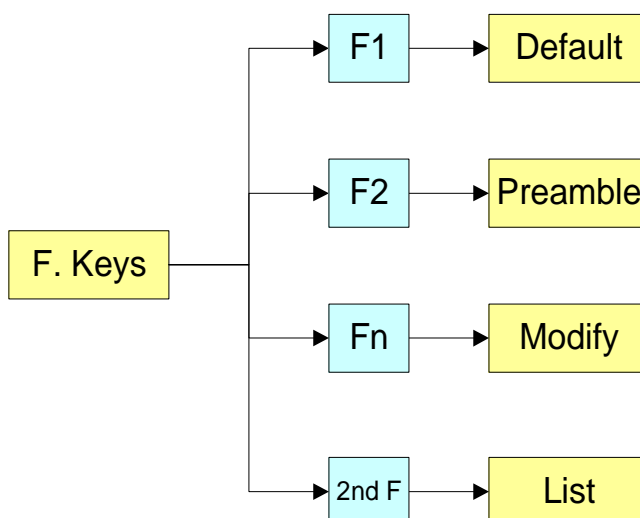
Code function (blinking)

- Enter the desired code and confirm with ENTER.

KEYS' FUNCTIONS IN THIS STEP

▲   scrolls backward inside the list of the keys.
▼   scrolls forward inside the list of the keys.
F1   performs the default of the function coupling of the keys.
F2   inserts the preamble.
ENTER   modifies the code of the function in the current key; while entering it confirms the enteredcode.
2nd F   displays the list of the functions; press ENTER to select the desired function.

NOTE: by pressing the **. /HELP** key, it's possible to display the list of the keys used inside this step and their functions. The list is automatically. If one wants to scroll the list of the keys in manual mode, it is possible to use the arrow keys (F6 ▼ and F7 ▲).

CODE	BASIC FUNCTION	DEFAULT KEY/S
100	Scale Zero (ZERO)	ZERO
101	Cyclic Zero (0.CYCLE)	2ndF + ZERO
102	Tare Execution (TARE)	TARE
103	Activate printer (PRN-ON)	Fn + 0
104	Simple printout (PRINT)	F5
105	Repetition of the last executed printout (CPY.PRN)	2ndF + F5
106	Change weight visualization (WEI.VIS)	2ndF + F8
107	Change visualizationLCD display (LCD.VIS)	2ndF + F9
108	Lock/Unlock the keyboard (L. KEYB)	F1 pressed at length
109	Display of Net Weight with sensitivity x 10 (Disp.10)	F2 pressed at length
110	Setting Date/Time (CLOCK)	F3 pressed at length
111	Diagnostic Menu (Diag.)	F4 pressed at length
112	Lock/Unlock Tare (L. TARE)	F5 pressed at length
113	Input Texts Configuration (txt)	F4
114	Calculator (CALC)	
115	Printout and Reset Partial Total (Prn.0.t0)	F8
116	Printout and Reset General Total (Prn.0.t1)	F9
117	Printout and Reset Grand Total (Prn.0.t2)	F10
118	Diagnostics peripheral units (P.DIAG)	
119	Com data diagnostics (COM.DAT)	
120	Change visualization to custom display (CST.DSP)	Fn + F9
121	Input text 0 configuration (tXt.0)	
122	Input text 1 configuration (tXt.1)	
123	Input text 2 configuration (tXt.2)	
124	Input text 3 configuration (tXt.3)	
125	Input text 4 configuration (tXt.4)	

126	Input text 5 configuration (tXt.5)	
127	Input text 6 configuration (tXt.6)	
128	Input text 7 configuration (tXt.7)	
129	Input text 8 configuration (tXt.8)	
130	Input text 9 configuration (tXt.9)	
131	Reset input texts (tXt.rSt)	
132	Sending print formats (SEnd.P.F.)	
OTHER FUNCTIONS		
200	Linking Print Formats (Prn.Fmt)	
201	Linking Second Print Format (SND.FMT)	
202	Setpoint configuration (SETPNT)	
204	Channel 1 selection (PLT-1)	2ndF + 1
205	Channel 2 selection (PLT-2)	2ndF + 2
206	Channel 3 selection (PLT-3)	2ndF + 3
207	Channel 4 selection (PLT-4)	2ndF + 4
208	Not used in this application (DAT.VIS)	
209	Switching platform visualization (CHG.PLT)	2ndF + 2ndF
210	Channel 5 selection (PLT-5)	2ndF + 5
211	Channel 6 selection (PLT-6)	2ndF + 6
212	Channel 7 selection (PLT-7)	2ndF + 7
213	Channel 8 selection (PLT-8)	2ndF + 8
SPECIAL FUNCTIONS		
300	Nr of scales used (USED.CH)	2ndF + F2
301	Selection sum (SUM)	2ndF + 0
302	Platform coordinates (P.COORD)	F2
303	Select weighing mode (WEI.MOD)	2ndF + F3
304	Totalisation (totAL)	F6
305	Automatic print partial total (Aut.prn)	F3
306	Visualize weighs list (WEI.LIS)	
307	Print weighs list (Prn.W.L.)	2ndF + F6
308	Cancel last weigh (CAnC. 1)	2ndF + F7
309	Cancel last vehicle (CAnC. 2)	
310	Database (Dtb)	F1
311	Item alpha-betic search (SEL.ITM)	
312	Switching sum visualization (CHG.VIS)	F7
313	Switching scale visualization (CHG.SCA)	
VISUALISATION / PRINTOUT MENU		
400	Number of Ticket Copies (CoPiES)	
401	Set progressive digits (Prg.1)	
402	Set progressive ticket (Prg.2)	
403	Reset progressive lot (0.Prg)	
404	Visualize partial total (V.t-0)	
405	Print partial total (Prn.t-0)	
406	Reset partial total (0.t-0)	
407	Visualize general total (V.t-1)	
408	Print general total (Prn.t-1)	
409	Reset general total (0.t-1)	
410	Visualize grand toal (V.t-2)	
411	Print grand total (Prn.t-2)	
412	Reset grand total (0.t-2)	
413	Reset scale totals (0.t-ALL)	
414	Reading alibi memory (ALIBI)	

WEIGHING THRESHOLDS		
500	Set maximum threshold (tr.HI)	2ndF + F10
501	Set minimum threshold (tr.LO)	

Quick introduction of the maximum and minimum thresholds
It's necessary to associate the functions 500 and 501, used for the setting of the totalisation thresholds, each to a function key between **F1** and **F10**. If one digits a value and then press the programmed key, the minimum or maximum threshold is set.
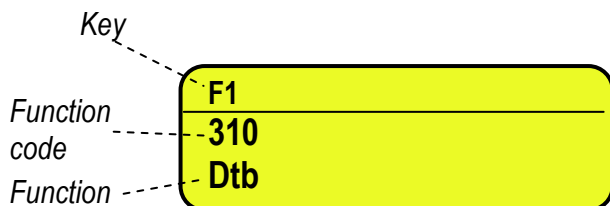
Preamble function
It is possible to associate also a preamble (numeric value) to the F1, F2…F10 keys. In this way, when the key is pressed, the preamble is automatically used as parameter of the function to be executed.
The functions to which can be associated a preamble are:

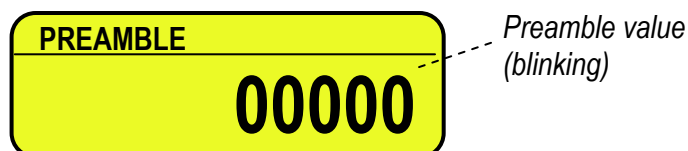| FUNCTIONS	PREAMBLE VALUE
Input text configuration (tXt)	number of the input text that one wants to modify.
Coupling print formats (Prn.Fmt)	number of the format on which one wants to modify the coupling.
Setpoint configuration (SETPNT)	number of the setpoint that one wants to modify.
Database (Dtb)	number of the article that is automatically selected
Sending print formats (SEnd.P.F.)	number of the format that one wants to execute (between 1 and 30).
Input text reset (tXt.rSt)	number of the input text that one wants to cancel (or 99 to cancel all the texts).

- select the desired key with F6/F7:

Key
Function code
Function

F1
310
Dtb

- press F2 to insert the preamble, select "ENABLED" and confirm with ENTER:

PREAMBLE
○ DISABLED
● ENABLED
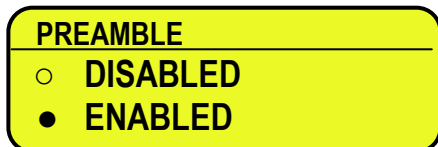
- insert the numeric value to combine with the function and confirm with ENTER

PREAMBLE
00000

Preamble value (blinking)

insert the desired value through the numeric keyboard and confirm with ENTER (by confirming the value 0, the preamble is disabled).

Key (preamble + function)

F1 (2 + F1)
310
Dtb
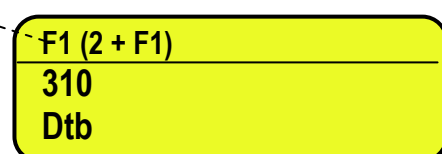
<< dtb >> DATABASES

<< AbiL.A >> ITEMS DATABASE ENABLING
It's possible to enable or disable the DATABASE:
ENABLED: databases enabled.
DISABLED: databases disabled.
- Press **F6/F7** to select "ENABLED" or "DISABLED", and **ENTER** to confirm.
(!) ENABLED

<< En.A.FLd >> DATABASE FIELD ENABLING
It's possible to enable one by one the fields required for the DATABASE.

Name of field - - - - -

Status - - - - -

> **DESCRIPTION2**
> ○ **DISABLED**
> ● **ENABLED**

- Press **F6/F7** to select "ENABLED" or "DISABLED", and **ENTER** to confirm.
- Proceed up to the last suggested field, after which it automatically exits the step.
(!) ENABLED

NOTE: The first customer description is always enabled.

<< init. >>   INITIALIZE DATABASES and INPUT TEXTS
By pressing **ENTER** one initialises the DATABASES (with the total values) and the INPUT TEXTS: in this way all their contents will be cancelled.
The cancellation is not immediate; the indicator requests a further confirmation (the LCD display shows "RESET DATABASES ? ENTER=YES   C=NO").
By pressing **ENTER** one confirms the operation, by pressing **C**, the indicator gives the possibility to cancel all the databases **individually** in this order: INPUT TEXTS, ITEMS.

<< totAL >> TOTALIZER

<< EXE.tot >> TYPE OF TOTALISATION
It is possible to select the type of totalisation:
- **MAnuAL**   manual totalisation with reenabling according to how the **rEACt** "REENABLINGS" step is set.
- **ALWAYS**   manual totalisation is always active.
(!) MAnuAL

<< rESEt >> CONFIRM RESET
It is possible to select the automatic resetting of the totals when these are printed (**DISABLED**) or the resetting upon request (**ENABLED**).
**(!) ENABLED**

<<LEn.uM >>   UNIT OF MEASURE COORDINATES
In this step is possible to set the unit of measure of the barycentre coordinates.
The unit of measure is set through the insertion of 2 ascii codes corresponding to the two characters in the text unit of measure.

EXAMPLE
If you want set "cm" as unit of measure you have to insert the 2 ascii codes, corresponding to the character "c" and the "m":

INSERTION FIRST CHARACTER

UM.CAR.1
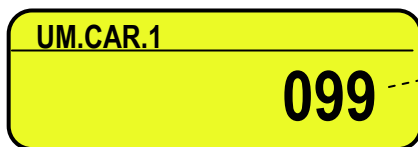
099 ---- Insertion ascii code corresponding to "c" character

INSERTION SECOND CHARACTER

UM.CAR.2
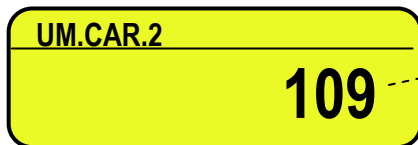
109 ---- Insertion ascii code corresponding to "m" character

This way the unit of measure that will be displayed on weighing (wheels weighs type) will be "cm".

You set through numeric keyboard the desidered ascii code and press the **ENTER** key for confirm.

If the value inserted is false, is possible delete fast this value through the **C** key.
For set the charactres that correspond to text of the unit of measure see the paragraph "ASCII CODE TABLE"
(!) "m"

<<LEn.dEC >> NUMBER OF DECIMALS COORDINATES

In this step you can set the number of decimal places which will see the units, the coordinates of the barycentre.
The range of value runs from 0 to 3.You can set through numeric keyboard the desired value and press **ENTER** key for confirm.
(!) 2

<<PLA.txt >> PRINTOUT TEXT FOR THE PLATFORM

In this step one sets the text (up to 10 characters) of the platform which you want to weigh; this description will be shown in the relative printouts.
(!) SCALE

<< 0.A.LiSt >> AUTOMATIC CLEAR OF WEIGH LIST

Is possible enabled or disable the automatic clear of the weigh list.
ENABLED: reached the max number of totalisation (3500), automatic clear the weigh list.
DISABLED: reached the max number of totalisation (3500), the LCD display show:"full list clear?".Press ENTER key for confirm.

NOTE:
With step set on "DISABLED", reached the max number of totalisation, if don't be to clear the weigh list, each next totalisation the instrument show on LCD display the text of the clear weigh list.
(!) DISABLED

<< rEACt >> REACTIVATIONS

It is possible to set whether to reactivate the printout and the weighing:
- PASSAGE BY ZERO OF THE NET WEIGHT **(PASS. 0)**
- WEIGHT INSTABILITY **(InStAb)**
(!) InStAb
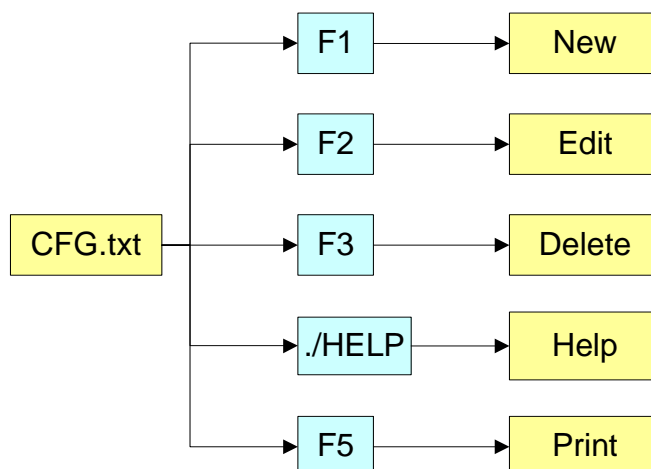
<< LoGo >>   TEXT UPON START-UP

At the start-up of the indicator, the LCD display shows a message of 2 lines of 16 characters, which is set in this step, or a 160x32 pixel photo uploadable from Dinitools™ (" *.bmp " monochromatic format is accepted).
(!) ◫ DINI ARGEO

<< tXt >> INPUT TEXTS

<< CFG.tXt >>   INPUT TEXT CONFIGURATION

Through this step one can enter, modify or cancel the heading of the input texts which will be filled in during the weighing through the **F4** key of the indicator; refer to the user manual for further specifications **(USER MAN.REF.)**.

```
                              ┌──────→  F1  ──────→   New
                              │
                              ├──────→  F2  ──────→   Edit
                              │
             CFG.txt ─────────┼──────→  F3  ──────→   Delete
                              │
                              ├──────→ ./HELP ─────→   Help
                              │
                              └──────→  F5  ──────→   Print
```

ENTRY
- Press **ENTER** to enter in the step.
- Select the eventual desired position through the arrow ▲ ▼ keys (or with the keyboard digit the position number).
- Press **F1** to enter the text in the desired position, or the first free position, if an already occupied position has been selected.
- The display shows "DESCRIPTION" and one can now enter the heading of the input text (up to 16 characters); press **ENTER** to confirm.
- The display shows "TEXT" and one can enter the contents of the input text (up to 32 characters); press **ENTER** to confirm.
- The display shows "THRESHOLD": this is the maximum number of characters that can be entered in the content of the input text in the weighing phase; when a new text is configured, this parameter is automatically set with the value equal to the number of characters that have been inserted in the "TEXT" field.
  NOTE: When a new input text is configured and the "TEXT" field is left empty, the "THRESHOLD" parameter is set with the value 01.
- The display shows "MANDATORY INPUT": if one confirms "ENABLED" it's possible to exit from the alphanumeric input only if the content of the input text is not empty.
- The display shows "ONLY VOID INPUT": if one confirms "ENABLED" it's possible to enter in the alphanumeric input of a text only if the content is empty.

MODIFICATION
- Press ENTER to enter in the step.
- Select the storage to be modified through the arrow ▲ ▼ keys (or with the keyboard digit the position number) and press F2.
- Modify the desired fields, listed in the previous section.
- NOTE: The text entered here defines also the field length for the compilation through the F4 key in the weighing phase; if no text is inserted, the length is set at 32 characters.

CANCELLATION
- Press ENTER to enter in the step.
- Select the storage to be cancelled through the arrow ▲ ▼ keys (or with the keyboard digit the position number) and press F3.
- The indicator requests a further confirmation: press ENTER to confirm or another key to cancel.

PRINTING
- Press ENTER to enter in the step.

- Once inside it, press the F5 key to print all the input texts. The LCD display shows the message "PRINT ?": confirm with the ENTER key to print the whole input texts' database.

HELP

By pressing the **./HELP** key, it's possible to see the keys list used in the menu.
The key list is automatically. If you want to see the keys list, in manual mode, use the arrow key (F6 ▾ and F7 ▴).

<< d.thrES >> DATA LENGTH THRESHOLD FROM READER

By pressing **ENTER** one can define a length (from 00 to 31) which conditions the storage of data ready by the third serial line (optional), for example through the bar code reader. If the datum has a length less or equal to the predefined one; it is stored in the first input text; otherwise it is stored in the second one. If one sets the value 00, it's possible to store up to 32 characters in the first input text.
NOTE: the function has been enabled on the serial port selected in the **SEtuP >> SEriAL >> rEAdEr** step, or on the PC KEYBOARD input, by selecting the "Reader" parameter in the **SEtuP >> PC.KEYb >> KEY.uSE** step.
(!) 00

<< tXt.i >> ENTRY OF HEADINGS

Up to 3 lines x 24 characters of text can be entered that will be printed if programmed in the printout formats (see blocks 369, 370, 371). The text entered will remain stored and printed until it is either cancelled or substituted.

<< CLr.rAM >> CANCELLATION OF THE BUFFERED RAM

The indicator has a buffered RAM memory (not volatile when power is removed) inside which is the database data, the input texts, the print formats, the heading.
The cancellation is not immediate; the indicator requests a further confirmation (the LED display shows "SURE?"): press **ENTER** to confirm; press another key to cancel.
NOTE: CALIBRATION DATA ARE NOT CANCELLED.

<< dtb.PWd >> SET DATABASE ACCESS PASSWORD

By confirming the **ENABLED** setting one may insert a password of up to 5 digits, which will inhibit some parameters of the **ENTER** key menu and the entry/modification/cancellation of the databases; by setting **DISABLED**, this password is disabled.
See the section "DATABASE ACCESS PASSWORD" in the user manual.
NOTE: The maximum enterable value is **65534**.
(!) DISABLED

<< tAMAG >>   TAMAGOTCHI

One enters the "NUMBER of MONTHS" passed (2 digits, **MonthS** parameters), or the "NUMBER of the WEIGHS" made (5 digits, **WEiGh.** parameter) **since the last calibration**; after this, one is advised to recalibrate the instrument.
By pressing **ENTER** one passes to a submenu:
- **MonthS** >>> Setting of Months
- **WEiGh.** >>> Setting of Weighs
- **rESEt**   >>> Clearing of Months and Weighs from the last calibrations

If you set the number of months and the weighing to zero, this function will be disabled; in any case it is possible to activate a choice of the number of months (MAX 99) or the number of weighs (MAX 99999).
By confirming with **ENTER** on the "rESEt" step one sets at zero the number of months and weighs taken place since the last calibration made.
At start-up and every day at 11:00 o'clock, the indicator will be checking for the number of weighing and the number of months that have passed since the last calibration. If one of the values or both are equal or higher than the previously set values, the message **ALArM** will appear on the LED display, while "WE ADVISE TO RECALIB. SCALE" appears in the LCD display and an intermitting sound is emitted. By pressing any key, the indicator will enter in the normal scale functioning mode.

NOTE: The number of weighs is increased when, after passing by instability, there is a stable weight and greater than 4 divisions on the scale.
(!) MonthS 00; WEiGh. 00000

<< SEtuP >> SCALE CONFIGURATION

<< ConFiG >> METRIC PARAMETERS

If various scales are connected, the scale number to be configured will be requested; the configurations inside this menu must be made for each connected scale.

<< EquAL >> EQUALIZATION (§)

See section "CALIBRATION"

(§) This step is visible only in case of more cells/channels in use.

<< PArAM. >> PARAMETERS

(*) << StAbiL >> *FILTERING INTEGRATION* (§)

By pressing the **ENTER** key one accesses the selection of the type and degree of filter intervention for the stability of the weight indication:

FLT 0 – 3	simple weighing
H.R.0 – 1	high resolution and for "A+B" mode
DYN.0 – 1	weight in motion (i.e. weighing animals)
DOS.0 – 3	dosage
SLW.0 – 3	rather unstable weight
H.R.2 – 7	high resolution and for "A+B" mode
DYN.2 – 3	weight in motion (i.e. weighing animals)
FLT.OFF	disabled (i.e. digital load cell already filtered)
FLT.AV2	digital load cell
R.ADC D	radio digital cell (i.e. WWS) on fast mode
R.ADC S	radio digital cell (i.e. WWS) on slow mode
CuStoM	diagnostic to be used by the manufacturer

The higher the filter value, and greater is its intervention relative to the type of filter used.

(!) **SLW.0** for analogue cell type

(!) **FLT 0** for digital cell type

(§) In case of WWS digital cell (set in the **<< CelTyp >>** step), one can select only **FLT.OFF**, **FLT.AV2**, **R.ADC D**, **R.ADC S**.

(*) In case of approved instrument, one can select only **FLT 0…3**, **H.R.0, H.R.1, DYN.0, DYN.1**.

<< (*) Auto 0 >> AUTOZERO AT START-UP

Automatic acquisition of the gross zero at start-up.

- Disabled

ENTER →

Clearing percentage (blinking)

- Enabled

Set the clearing percentage in relation to the capacity (in between +/-1 and +/- 50 %).

ENTER →

Clearing percentage (blinking)

- Executed cyclically on all the present scales. This value is not visible if there is just one scale (see the **nuM.SCA** parameter).

Set the clearing percentage in relation to the capacity (in between +/-1 and +/- 50 %).

See section "SCALE ZERO FUNCTIONS" **(USER MAN.REF.)** for details on the functioning.

(*) with approved instrument:
- it's possible to set only the ENABLED, CYCLIC values. If DISABLED has been set, it's not possible to change it.
- by confirming the setting of ENABLED or CYCLIC it is possible to modify the clearing percentage between +/-1 and +/-10 %.

(!) ENABLED, +/-10 %

(*) << 0.PErC >> ZERO FUNCTIONS IN WEIGHING PHASE
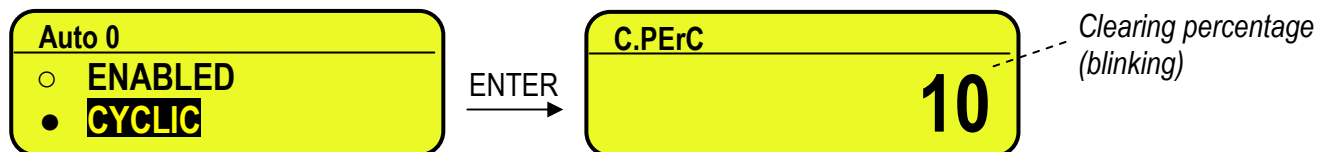Acquisition of the gross zero through the ZERO key.

Clearing percentage (blinking)

Set the clearing percentage in relation to the capacity (in between +/-1 and +/- 50 %).
By entering the 0 value, it's possible to disable the ZERO functions in the weighing phase.

See section "SCALE ZERO FUNCTIONS" **(USER MAN.REF.)** for functioning details.

(*) In case of approved instrument, the settable values are between 0 and 2.
(!) +/-2 %

(*) << 0.trACk >> *ZERO TRACKING*
This menu allows setting the zero tracking, in other words, the compensation parameter of the scale's thermal drift; the set value corresponds to the number of divisions that is reset in the fixed time of 1 second:
TR. ½   +/- half division.
TR. ¼   +/- one fourth of a division.
TR. 1   +/- one division.
TR. 2   +/- two divisions.
TR. no tracking disabled.
(!) TR. ½
(*) with APPROVED instrument it is possible to select just the **TR. no**, **TR. ½** , **TR. ¼** parameters.

(*) << diV.Stb >> *DIVISIONS BY STABILITY*
In this step one enters the number of divisions by which the instrument detects the weight stability; the higher the number of divisions, less is the sensitivity, and consequently the stability is more easily detected. The possible values are 0…99. By setting the 0 value, the check is disabled.
(!) 02
(*) with APPROVED instrument, the parameter is read-only.

(*) << GrAV >> GRAVITY ZONE AND ZONE OF USE
In this step one selects the gravitational acceleration value **of calibration and of use** of the instrument:
Manual entry of the g value: the instrument is ready for the manual entry of the gravitational acceleration value.
If one enters a wrong g value: the minimum decimal value is proposed (9,75001); by a wrong g value one intends a decimal number not including between 9,75001 and 9,84999 (included).

(!) g = 9,80655
(*) with APPROVED instrument the parameter is read only.

(*) << CALib.>>   SCALE CALIBRATION
See section "CALIBRATION".
(*) with APPROVED instrument the parameters inside of this step are read only.

(*) << 0.CALib >> CALIBRATION OF ZERO
See section "CALIBRATION".
(*) In case of approved instrument the parameter is not displayed.

(*) << thEo.CA >> THEORETICAL CALIBRATION
See section "THEORETICAL CALIBRATION".
(*) In case of approved instrument the parameter is not displayed.

(*) << AdJ.CEL >> MANUAL ADJUSTMENT CELLS (§)
See section "ADJUSTMENT OF EQUALIZATION COEFFICIENT".
(*) In case of approved instrument the parameter is not displayed.
(§) This parameter is visible only in case of various cells / channels forming the scale.

<< SEriAL >> SERIALS, PRINTOUTS, ETC…

<< PortS >> SERIAL CONFIGURATION
By pressing **ENTER** it is possible to select the more suitable combination for the use of the three serial ports in the indicator hardware (**COM1**, **COM2**, **COM3**):

Parameter	COM 1	COM 2	COM 3
PC.Pr.AX	ComPC	ComPrn	ComAux
PC.AX.Pr	ComPC	ComAux	ComPrn
Pr.PC.AX	ComPrn	ComPC	ComAux
Pr.AX.PC	ComPrn	ComAux	ComPC
AX.PC.Pr	ComAux	ComPC	ComPrn
AX.Pr.PC	ComAux	ComPrn	ComPC

(!) PC.Pr.AX

<< CoMPrn >> CONFIGURATION OF PRINTER SERIAL

<< bAud >> SET BAUD RATE
By pressing the **ENTER** key one accesses the selection of the data transmission speed (measured in Baud = bit/second). The possible values are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.
(!) 9600

<< PAritY >> SET PARITY
By pressing the **ENTER** key one accesses the selection of the parity bit type. The possible values are: None (absent parity bits), Odd (uneven parity bits) e Even (even parity bits).
(!) None

<< Word >> SET WORD
By pressing the **ENTER** key one accesses the selection of the number of data bits. The possible values are: 8 (8 data bits) and 7 (7 data bits).
(!) 8 bit

<< StoP b >> SET STOP BIT

By pressing the **ENTER** key one can then select the number of stop bits. The possible values are: 1 (1 stop bit) and 2 (2 stop bits).

(!) 1 bit

<< CtS.St. >> SYNCHRONISM SIGNAL

On the serial line set as COM.PRN the indicator can manage a synchronism signal.

- by using the dedicated CTS (Clear To Send) signal, if one uses the COM2 port, or

- by using the RX input, if one uses the COM1 or COM3 port (in this case, by enabling the function, this input will be no longer managed for other reception functions).

A device (like a printer) that is slow in processing the data received, can interrupt the transmission temporarily using this signal.

With synchronism signal active for a time greater than 10 seconds the indicator cancel the printing, it shows the message "PRINTER ERROR: CHECK THE CTS!" for a few seconds and returns to the weighing phase.

It is possible to select:

NO.CTS	Disable	(ITALORA WITTY280 and SMT280)
LOW	CTS active low	(LP522/542, EPSON LX300, TM295, TPR)
HIGH	CTS active high	(DP190)
EMUCTS	Emulation of CTS signal: one is asked to enter the number of characters (nChrS) using 3 digits, which will be transmitted upon each transmission; then one should enter the wait time in milliseconds (tiME), using 4 digits, from a transmission and the next one.	
XON/XOFF	XON/XOFF control for the printer. Is necessary the insertion of the printer reset command (4 characters in decimal) and the decimal value of XON and XOFF character (17 and 19 of default).	

(!) LOW

<< SND.CTS >> SECOND CTS SIGNAL **(§)**

This step decides if enable **(ENABLED)** second CTS signal used for 2 printers or not **(DISABLED)**. See the previous step **<< CtS.St. >>**.

(§) the step is visible only if **COM2** is set on **"PRN"** and **LOW** or **HIGH** signal is enabled inside **"CtS.St."** step.

(!) DISABLED

<< Err.CtS >> CTS STATUS ERROR

By enabling this error, it is possible to block in advance the print or totalisation function, if recalled with an already active synchronism signal (see previous step): the indicator display will shows the message "PRINTER ERROR: CHECK THE CTS!" for a few seconds and return to the weighing phase without carrying out the function.

Press F6/F7 to Enable (ENABLED) or Disable (DISABLED), and ENTER to confirm.

(!) DISABLED

<< PWrPrn >> PRINTER POWER SUPPLY

This step regulates the "AUX" output voltage which is on the board (see the electrical scheme in section "ELECTRICAL SCHEMES"); one may select:

PWrEXt	External power supply (AUX output active).
EXtoFF	External auto-off power supply (AUX output always active; at the beginning of each printout some CR are sent as start-up characters, for a printer in energy saving mode).
PWrint	Internal power supply (AUX output active just when printing).

(!) PWrint

<< ProtoC >> SELECTS PROTOCOL

norMAL	standard protocol
riPE 6	Dini Argeo repeater
Alibi	alibi memory protocol
Cont.	continuous transmission protocol
MuL.riP	Multi-repeater

For the protocol specifications, see section "TRANSMISSION PROTOCOLS".

(!) norMAL

<< CoM PC >> PC SERIAL CONFIGURATION

<< bAud >> SET BAUD RATE
By pressing the **ENTER** key one accesses the selection of the data transmission speed (measured in Baud = bit/second). The possible values are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.
(!) 9600

<< PAritY >>   SET PARITY
By pressing the **ENTER** key one accesses the selection of the parity bit type. The possible values are: None (absent parity bits), Odd (uneven parity bits) e Even (even parity bits).
(!) None

<< Word >> SET WORD
By pressing the **ENTER** key one accesses the selection of the number of data bits. The possible values are: 8 (8 data bits) and 7 (7 data bits).
(!) 8 bit

<< StoP b >> SET STOP BIT
By pressing the **ENTER** key one can then select the number of stop bits. The possible values are: 1 (1 stop bit) and 2 (2 stop bits).
(!) 1 bit

<< CtS.St. >> SYNCHRONISM SIGNAL
On the serial line set as COM.PRN the indicator can manage a synchronism signal CTS (Clear To Send). A device (like a printer) that is slow in processing the data received, can interrupt the transmission temporarily using this signal.
It is possible to select:

NO.CTS   Disable
LOW   CTS active low
HIGH   CTS active high
EMUCTS   Emulation of CTS signal: one is asked to enter the number of characters (nChrS) using 3 digits, which will be transmitted upon each transmission; then one should enter the wait time in milliseconds (tiME), using 4 digits, from a transmission and the next one.

(!) NO.CTS

<< Add.485 >> 485 ADDRESS
By pressing **ENTER** it is possible to enter a 2 digit code (from 00 to 98) which identifies the instrument from the ones connected in the RS485 transmission mode.
NOTE: the 99 code is used as a broadcast address.
(!) 00

<< ProtoC >> SELECTS PROTOCOL

StAnd   Standard
AFXX   AF0X
riPE 6   Dini Argeo 6-digit repeater
riPLCd   lcd repeater
Mondir   Uni-directional
ALibi   Alibi memory
SMA   SMA protocol
ModbuS   Modbus protocol
ProFi.b   Profibus protocol
MuL.riP   Multi-repeater

For the protocol specifications, see section "TRANSMISSION PROTOCOLS".
(!) StAnd

<< PC.ModE >>   TRANSMISSION TYPE
 rEquE.   On request
 Cont.   Continuous
 StAbiL   On stability
 - 485 -   485 mode
For the transmission mode specifics, see section "TRANSMISSION MODES".
(!) rEquE.

<< CoMAuX >> AUX SERIAL CONFIGURATION

<< bAud >> SET BAUD RATE
By pressing **ENTER** one can select the data transmission speed (measured in Baud = bit/second). The possible values are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.
(!) 9600

<< PAritY >> SET PARITY
By pressing **ENTER** one can select the parity bit type. The possible values are: None (absent parity bit), Odd (uneven parity bit) and Even (even parity bit).
(!) None

<< Word >>   SET WORD
By pressing **ENTER** one can select the number of data bits. The possible values are: 8 (8 data bits) and 7 (7 data bits).
(!) 8 bit

<< StoP b >> SET STOP BIT
By pressing the **ENTER** key one can then select the number of stop bits. The possible values are: 1 (1 stop bit) and 2 (2 stop bits).
(!) 1 bit

<< CtS.St. >> SYNCHRONISM SIGNAL
Not used in this application.

<< rAdio >> SELECT RADIO CHANNEL
By pressing the **ENTER** key one can select to enable or disable the radio module. By confirming "ENABLED", it's possible to choose the radio channel to be set if radio module is connected well.
(!) DISABLE

<< ProtoC >>   SELECTS PROTOCOL
 nonE   no protocol
 Cont.   continuous transmission
 riPE 6   Dini Argeo 6-digit repeater.
 riPEdC   Dini Argeo repeater DC
 (!) nonE

<< CEL.Add >> SET 485 CELLS ADDRESS **(§)**
See section "SETTING COMMUNICATION WITH THE DIGITAL CELLS".

<< rEAdEr >> READER PROTOCOL
Enabling data reception from external reader (See relative manual).
DISABLE   data reception disabled
COM.AUX   protocol enabled on the ComAux
COM.PRN   protocol enabled on the ComPrn
(!) DISABLE

<< r71.rEP >> R71 REPEATER

If the R71620 is connected to the indicator, through this step it is possible to enable the dedicated protocol, for the serial ports set with the "**riPE 6**" protocol.

DISABLED   Disabled
ENABLED   Abilitato
(!) DISABLED

<< Prn.FMt >> PRINT CONFIGURATION

Through this step one can configure up to 30 print formats directly from the indicator.

In this step it is possible to choose the number of format to be configured; therefore enter, modify or eliminate the print blocks following the instructions shown in section "PROGRAMMING THE PRINTOUTS".

<< tErMin >> SET TERMINATOR TYPE

When connecting a printer it is possible to define the end of the print line, in the print blocks provides the terminator print (indication +T, see section "LIST OF PRINT BLOCKS")

CR   TERMINATOR CR (character 13 from ASCII table)
CR LF   TERMINATOR CR LF (character 13 and character 10 from ASCII table)
LF   TERMINATOR LF (character 10 from ASCII table)
NO.TERM   NO TERMINATOR (for Dini Argeo printiers, with standard print by Dinitools™)
(!) LF

<< dEF.Prn >> PRINTOUT DEFAULT

By pressing **ENTER** one is asked to confirm the activation of the default printouts: the LED display shows "SurE?": press **ENTER** again to confirm or another key to cancel the operation.

The printout default is valid only for TPR printer.

WARNING: By enabling the printouts, all the formatted print formats will be CANCELLED and the first 11 will be SUBSTITUTED by the default formats which automatically will be linked to the 11 print functions.

<< Anout >> ANALOGUE OUTPUT (OPTIONAL)

If various scales are connected (see **nuM.SCA** parameter), the scale number to be configured will be requested; the configurations inside this menu must be made for each connected scale.

<< SLot >> SLOT SELECTION

One selects the SLOT to be used with the analogue output: SLOT 1 or SLOT2.

<< ModE >> OPERATING MODE

AO G   = analogue output on the gross weight
AO n   = analogue output on the net weight

<< AoMA >> MAXIMUM VALUE

Setting of the maximum value of the analogue output.

<< AoZE >> VALORE ZERO BILANCIA

Setting of the analogue output value when the scale displays zero weight.

<< AoMi >> MINIMUM VALUE

Setting of the minimum value of the analogue output.

See the section "ANALOGUE OUTPUT (OPTIONAL)" for configuring.

<< inPutS >> INPUT CONFIGURATION

The indicator has 2 inputs on the main board, 6 on the optional expansion board, which may take on the meaning of a specific function key or of any scale function key, among those available; it is therefore possible to emulate a few keys through the corresponding input.

in. 1   INPUT 1

None	NO INPUT
TARE	TARE KEY
2nd F	2nd F KEY
Fn	Fn KEY
POINT	POINT KEY
C	C KEY
F1	F1 KEY
F2	F2 KEY
F3	F3 KEY
F4	F4 KEY
F5	F5 KEY
F6	F6 KEY
F7	F7 KEY
F8	F8 KEY
F9	F9 KEY
F10	F10 KEY
- 0 -	NUMERICAL ZERO KEY
- 1 -	ONE KEY
- 2 -	TWO KEY
- 3 -	THREE KEY
- 4 -	FOUR KEY
- 5 -	FIVE KEY
- 6 -	SIX KEY
- 7 -	SEVEN KEY
- 8 -	EIGHT KEY
- 9 -	NINE KEY
PLt – 0	ENABLE REMOTE SCALE
PLt – 1	ENABLE SCALE 1
PLt – 2	ENABLE SCALE 2
PLt – 3	ENABLE SCALE 3
PLt – 4	ENABLE SCALE 4
LOC.IN	KEYBOARD LOCK
OFF	TURNING OFF THE INDICATOR
-OK-	OK MESSAGE
ERROR	ERROR MESSAGE
READY	READY MESSAGE
START	START MESSAGE
STOP	STOP MESSAGE
RL.OFF	SETS ALL THE RELAYS AT OFF
LNG.KEY	SETS KEY PRESSED AT LENGTH
LEVEL	SETS LEVEL CHECK
R.START	CYCLE MANAGEMENT ON THE RELAYS (dosage)

(!) nonE

The same configurations are valid for:

in. 2   INPUT 2
in. 3   EXPANSION BOARD (OPTIONAL)
in. 4   EXPANSION BOARD (OPTIONAL)
in. 5   EXPANSION BOARD (OPTIONAL)
in. 6   EXPANSION BOARD (OPTIONAL)
in. 7   EXPANSION BOARD (OPTIONAL)
in. 8   EXPANSION BOARD (OPTIONAL)

r.StArt - Dosage cycle management through outputs
Premise: The functioning provides for an input to be set on R.START.

The involved relays are OUT1 and OUT2: in order to function correctly these must be configured with the NC contact on a weight function, for example Set point on the Net or Gross weight.
Upon enabling the input linked to the R.START both relays are enabled; the dosage automatically ends upon reaching the set point linked to OUT2.

Notes:
1) if an input is linked to R.START, OUT1 and OUT2 are managed in "dosage" even if these are configured in their exclusive functioning;
2) it's possible to execute also dosages in unloading (negative set points) as long as the zeroing or the tare at cycle start is executed (through the input or the key);
3) if input1 is linked to the tare or to the zero, the dosage starts only if the net weight is zero (this allows to execute an initial compulsory zeroing);
4) it's possible to interrupt at any moment the dosage cycle by enabling an input set on RL.OFF.

for example:
rL.1=100 rL.2= 200 in.1=rL.oFF in.2=r.StArt
- enabling in.2:   one enables OUT1 and OUT2 and the dosage cycle starts.
- upon reaching 100g the OUT1 disables.
- upon reaching 200g the OUT2 disables and the dosage cycle ends.
- by enabling in.1 the dosage cycle resets at any point.

<< outPut >> OUTPUT CONFIGURATION
The indicator has 4 outputs on the main board and 12 outputs on the optional expansion board; through this step one configures the functioning of each relay.
See the "SET POINT FUNCTION" section in the user manual for the functioning mode specifications.
<< r.ConF. >> OUTPUTS' CONFIGURATION
In this step it is possible to configure the normal status, the switching condition and the functioning mode for each output.

<< rL. 1 >>   OUTPUT 1 (OUT1)
<< no/nC >> *NO/NC CONTACTS*
By pressing **ENTER** one sets the status of the output after the instrument start-up: normally open **(n.o.)** or normally closed **(n.C.).**
NOTE: with indicator turned off, the status of the output is normally open.
(!) n.o.

<< onStAt >> SWITCHING CONDITION
By pressing **ENTER** one sets the output activation condition:
drCt   DIRECT: it is activated as soon as the weight reaches the set threshold, (independently from the stability), and it is deactivated as soon as it goes under the disabling threshold.
StbL   UPON STABILITY: it is activated in the moment in which the weight, after reaching the set activation threshold, becomes stable, and it is deactivated in the moment in which the weight goes below the set disabling threshold, it becomes stable.
(!) drCt

<< rL.iSt >> HYSTERESIS
This step allows selecting the outputs functioning mode with or without hysteresis:
iSt.on   functioning with hysteresis
iSt.oFF   functioning without hysteresis
(!) iSt.oFF

<< rLFunC >> FUNCTION
This step allows selecting the output functioning mode:
nonE   NO FUNCTIONING (disabled).

GroSS   GROSS SET POINT (activation of the on the gross weight).
nEt   NET SET POINT (activation of the on the net weight).
Gro.0   0 GROSS (activation of the on the gross weight at 0).
nEt.0   0 NET (activation of the on the net weight at 0).
Motion   INSTABILITY (activation of the upon weight instability).
totAL   TOTALISATION (activation of the input/output cycle end or single weigh).
t.W.1   PARTIAL TOTAL (activation of the on the partial total + net weight on the scale).
t.W.2   GENERAL TOTAL (activation of the on the general total + net weight on the scale).
t.W.3   GRAND TOTAL (activation of the on the grand total + net weight on the scale).
nEt.nEG FUNCTIONING ON THE NEGATIVE WEIGHT (activation on the net negative weight).
(!) nonE

The same configurations are valid for:
rL. 2 OUTPUT 2 (OUT2)
rL. 3 OUTPUT 3 (OUT3)
rL. 4 OUTPUT 4 (OUT4)
rL..5 OUTPUT 5 (OUT5), EXPANSION BOARD (OPTIONAL)
rL..6 OUTPUT 6 (OUT6), EXPANSION BOARD (OPTIONAL)
rL..7 OUTPUT 7 (OUT7), EXPANSION BOARD (OPTIONAL)
rL..8 OUTPUT 8 (OUT8), EXPANSION BOARD (OPTIONAL)
rL..9 OUTPUT 9 (OUT9), EXPANSION BOARD (OPTIONAL)
rL..10 OUTPUT 10 (OUT10), EXPANSION BOARD (OPTIONAL)
rL..11 OUTPUT 11 (OUT11), EXPANSION BOARD (OPTIONAL)
rL..12 OUTPUT 12 (OUT12), EXPANSION BOARD (OPTIONAL)
rL..13 OUTPUT 13 (OUT13), EXPANSION BOARD (OPTIONAL)
rL..14 OUTPUT 14 (OUT14), EXPANSION BOARD (OPTIONAL)
rL..15 OUTPUT 15 (OUT15), EXPANSION BOARD (OPTIONAL)
rL..16 OUTPUT 16 (OUT16), EXPANSION BOARD (OPTIONAL)

<< r.ModE >>   OUTPUTS' CONFIGURATION
Normal   The check is always made on all the configured outputs; therefore each output is independently (its enabling does not provoke the disabling of the others).
EXCLUS   Starting from the last output up to the first its activation excludes the check on the previous ones (the activation provokes the disabling of the previous out puts) and its disabling reenables it.
(!) Normal

<< inF.rEd >> REMOTE CONTROL CONFIGURATION
Entering the step one can choose one of four types of remote control shown:
- **None** (no remote control enabled)
- **IR 4** (4-key infrared remote control)
- **IR 18** (18-key infrared remote control)
- **IR 19** (19-key infrared remote control)
- **RD 6** (6-key radio remote control)
- **RD.BR 6** (6-key radio broadcast remote control)

The remote control keys repeat the keys' functions (both the ones obtained with a SHORT pressing as well as those with a LONG pressing).
If the weight indicator provides for a **4-key remote control** or a **6-key remote control** (optional) it's possible to personalise the configuration of the keys of the infrared ray remote control; it may be done as follows:

KEY 1   key 1 ("Zero" on the remote control)
None   NO INPUT
TARE   TARE KEY
2nd F   2nd F KEY
Fn   Fn KEY
POINT   POINT KEY
C   C KEY

F1	F1 KEY
F2	F2 KEY
F3	F3 KEY
F4	F4 KEY
F5	F5 KEY
F6	F6 KEY
F7	F7 KEY
F8	F8 KEY
F9	F9 KEY
F10	F10 KEY
- 0 -	NUMERICAL ZERO KEY
- 1 -	ONE KEY
- 2 -	TWO KEY
- 3 -	THREE KEY
- 4 -	FOUR KEY
- 5 -	FIVE KEY
- 6 -	SIX KEY
- 7 -	SEVEN KEY
- 8 -	EIGHT KEY
- 9 -	NINE KEY
PLt – 0	ENABLE REMOTE SCALE
PLt – 1	ENABLE SCALE 1
PLt – 2	ENABLE SCALE 2
PLt – 3	ENABLE SCALE 3
PLt – 4	ENABLE SCALE 4
LOC.IN	KEYBOARD LOCK
OFF	TURNING OFF THE INDICATOR
-OK-	OK MESSAGE
ERROR	ERROR MESSAGE
READY	READY MESSAGE
START	START MESSAGE
STOP	STOP MESSAGE
RL.OFF	SETS ALL THE RELAYS AT OFF
LNG.KEY	SETS KEY PRESSED AT LENGTH
LEVEL	SETS LEVEL CHECK

(!) nonE

The same configurations are valid for:
KEY 2   key 2 ("Tare" on the remote control)
KEY 3   key 3 ("F1 Mode" on the remote control)
KEY 4   key 4 ("F2 Print" on the remote control)

If the weight indicator provides for a **18-key remote control** (optional) it's possible to choose the configuration of the keys of the infrared ray remote control **(USER MAN.REF.)**.
NOTE: The function of the prolonged pressure of the keys is not repeatable on the remote control.

<< t.LoCk >> TARE LOCK/UNLOCK

Unlock	LOCKED TARE
Lock	UNLOCKED TARE
Disable	DISABLED TARE

See the section "TARE LOCKED/UNLOCKED" in the user manual for the functioning specifics.
NOTE: during the weighing it is possible to lock / unlock the tare by pressing at length the **F5** key.
 (!) LocK

<< PoW.oFF >> AUTO SWITCH OFF

One enables/disables the auto switch-off after the scale is not used for 5 minutes, <u>with plate unloaded.</u>
ENABLED
DISABLED
(!) DISABLED

<< bt.StAt >>   BATTERY LEVEL INDICATION

One selects whether to enable or disable the software check of the battery charge level: each time that the charge goes down of a level, it is notified through the symbols on the LCD display (battery icon). See section "BATTERY LEVEL INDICATION", **USER MAN.REF.**.
ENABLED
DISABLED
NOTE: by enabling the indication of the battery level, the backlight is automatically managed.
(!) DISABLED

<< baCkuP >> INSTRUMENT DATA BACKUP

By pressing **ENTER** the indicator display shows "SURE?": press the **ENTER** to confirm or **C** to cancel the operation. In the first case, one is asked to enable or not a password.
In the default steps (standard default, technical default, clearing of buffered ram, prints default or keys default), if a backup of the data is present, one is asked to execute the normal default by pressing the **ENTER** key or to restore the saved data by pressing the **F1** key.

<< dFLt >> DEFAULT STANDARD

By pressing **ENTER** the indicator activates the default parameters (shown in bold and preceded by the exclamation point at the end of each step) and the standard printouts; the LED display shows **SURE?**: press **ENTER** to confirm or **C** to cancel the operation.
NOTE: THE CALIBRATION, THE DATABASES, THE INPUT TEXTS AND THE HEADINGS ARE NOT DELETED.

<< dFLt.t >>   TECHNICAL DEFAULT (*)

By pressing **ENTER** the indicator activates the default parameters (shown in bold and preceded by an exclamation point at the end of each step), the default printouts, initialises the database, cancels the input texts, the heading and **THE CALIBRATION**; the LED display shows **SurE?**: press the **ENTER** key to confirm or **C** to cancel the operation.
(*) In case of approved instrument the step is not accessible.

<< PWd.SEt >> SET ACCESS PASSWORD TO SET-UP ENVIRONMENT

One configures whether to enable or disable the access password to the technical menu:
ENABLED
DISABLED
By selecting **ENABLED**, the instrument predisposes itself for the password entry, made up of up to 5 digits; when finished entering confirm with **ENTER**.
The settable values go from 0 to 65534.
See section "SETUP ENVIRONMENT" for the functioning specifics.
(!) DISABLED

<< ini.AL >> INITIALIZES ALIBI MEMORY (*)

The initialisation cancels all the data stored in the Alibi memory; by pressing **ENTER** one is asked to confirm the operation. The LED display shows **SURE?**; press **ENTER** again to confirm or another key to cancel.
At the end the "oK" message appears if the operation is made with success; otherwise the "Err" message is displayed.
NOTE: It is not possible to make the initialisation on an approved instrument
(*) In case of approved instrument the parameter is not accessible.

<< d.SALE >> DIRECT SALE (*)

- **NO**   limitations disabled
- **YES**   limitations enabled

Refer to the user manual for the functioning description **(USER MAN.REF.)**.

(!) NO

(*) In case of approved instrument the parameter is not accessible.

<< PC.kEyb >> PC KEYBOARD CONFIGURATION

<< kEy.uSE >> USE OF PC KEYBOARD INPUT

Normal Use of the external PC keyboard (see in the user manual section "INDICATOR CONNECTED TO PC KEYBOARD").

READER Enabling data reception from external reader (See relative manual).

(!) Normal

<< LAyout >> EXTERNAL PC KEYBOARD LANGUAGE

ENGLISH   American / English
DEUTSCH   German
FRANCAIS   French
ITALIANO   Italian
ELLENIKA   Greek
(!) ENGLISH

<< diAG. >> DIAGNOSTICS MENU

It's a submenu inside of which it is possible to check the software and hardware components of the scale, accessible also during the weighing, keeping the **F4** key pressed at length.

<< PrG.VEr >>   FIRMWARE

Software version check.

<< WEiGht >>   WEGHT

By pressing **ENTER** the display shows:
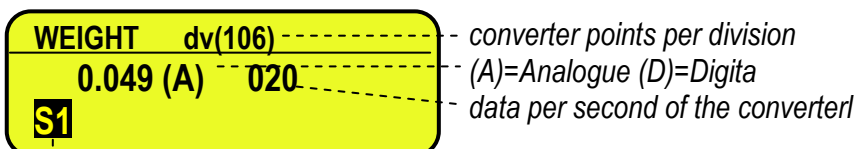
```
WEIGHT     dv(106)  ----------- converter points per division
    0.049 (A)    020 ----------- (A)=Analogue (D)=Digita
 S1                  ----------- data per second of the converterl
```

Checked scale

If various scales are connected independently by pressing the F6 / F7 keys it is possible to select the scale to be checked.

<< MiLLiV >> MILLIVOLT

Check of the load cell signal in millivolts, in three decimals.

By pressing **ENTER** the display shows:

```
MILLIVOLT
    0.285   (D) ---------- Millivolt and type of cells: (A)=Analogue, (D)=Digital
 S1  CH=ALL  DGX=ALL ----- Checked DGX (only with DGX type of cells)
```

Checked channel / digital load cell (With the DGX type of cells, it is the channel inside the DGX)

Checked scale

If various scales are connected independently by pressing the F6 / F7 keys it is possible to select the scale to be checked.

By pressing the F8 / F9 keys it is possible to move on the selection of the channel or the DGX (only with DGX type of cells); the display indicates always the active selection:

```
MILLIVOLT
      0.285   (D)
 S1  CH=ALL  DGX=ALL
```
By pressing always the F6 / F7 keys it is possible to select the value of the active selection.

In the case the load cell is not connected or faulty, or the A/D converter is faulty, it is possible that floating values are shown, or the message "Err.C.XX" appears (in which XX is the number of channel / digital load cell on which the faulty is detected), if the signal exceed the underload / overload value of the converter.

To check if the A/D converter is faulty, disconnect the channel on which the faulty is detected and make a short between SIG+ and SIG-; with non faulty A/D converter a mV value proxime to 0.000 will be displayed.

<< AdC.Pnt >> ADC POINTS
Check of the A/D converter points.

By pressing **ENTER** the display shows:
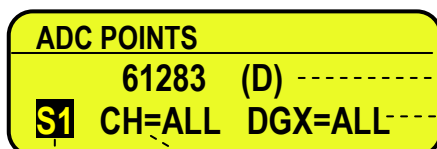
```
ADC POINTS
      61283   (D) --------- A/D converter points and type of cells: (A)=Analogue, (D)=Digital
 S1  CH=ALL  DGX=ALL----- Checked DGX (only with DGX type of cells)
```

Checked channel / digital load cell (With the DGX type of cells, it is the channel inside the DGX)

Checked scale

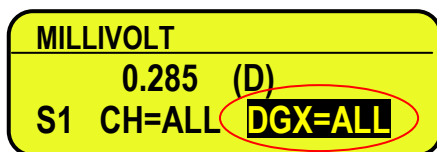If various scales are connected independently by pressing the F6 / F7 keys it is possible to select the scale to be checked.

By pressing the F8 / F9 keys it is possible to move on the selection of the channel or the DGX (only with DGX type of cells); the display indicates always the active selection:

```
ADC POINTS
      61283   (D)
 S1  CH=ALL  DGX=ALL
```

By pressing always the F6 / F7 keys it is possible to select the value of the active selection.

In the case the load cell is not connected or faulty, or the A/D converter is faulty, it is possible that floating values are shown, or the message "Err.C.XX" appears (in which XX is the number of channel / digital load cell on which the faulty is detected), if the signal exceed the underload / overload value of the converter.

To check if the A/D converter is faulty, disconnect the channel on which the faulty is detected and make a short between SIG+ and SIG-; with non faulty A/D converter a number of point proxime to 0 will be displayed.

<< diSPLA >> DISPLAY
By pressing **ENTER** the instrument shows the display version and the led turns on.

By pressing a key all the leds (in the 3590E version) and LCD display pixels turn on for some seconds, after that the indicator exit automatically from the step.

<< kEyb. >> KEYBOARD
By pressing **ENTER** the instrument displays 0; by pressing the keys one at a time, the relative codes are rebrought to the display. One exits pressing the same key three times.

<<CtS.St. >> CTS STATUS

By pressing **ENTER** the CTS signal type of the connected printer is shown on the display.
If the second CTS is enabled is possible scroll up and down with the rows to see the status of both CTS.

<< b.LEVEL >> BATTERY LEVEL

By pressing **ENTER** one views on the display the value of the battery input on the motherboard, read by the analog-digital converter.

<< PoWEr >> POWER SUPPLY VOLTAGE

By pressing **ENTER** the display shows the value of the power adapter input on the motherboard, read by the analogue-digital converter.

<< rELE >> RELAY TEST

By pressing **ENTER** it is possible to test all the available relays; by selecting these one at a time with the ▲ ▼ arrow keys, these are activated:

RL.01	OUT1	
…		Relay of the main board.
RL.04	OUT4	
RL.05	OUT5	
…		Relay of the expansion board (optional).
RL.16	OUT16	

<< inPutS >> INPUT TEST

By pressing **ENTER** it's possible to test the status of the inputs; the display will show:

```
INPUTS
1  2  3  4  5  6  7  8
0  0  0  0  0  0  0  0
```

in which the number on the first line identifies the input:

1	IN1	
		Inputs of the motherboard
2	IN2	
3	IN3	
…		Inputs of the expansion board
8	IN8	

and the number each input corresponds to its status:

0 = disabled;
1 = enabled.

<< Anout >> ANALOGUE OUTPUT

If the instrument is fitted with the analogue output, through this step one can test if the values of the D/A converter (to be entered at time of calibration) correspond with the relative values of the analogue output (in voltage or in current), see section "ANALOGUE OUTPUT (OPTIONAL)".
By pressing **ENTER** the display shows 0; enter a value between 0 and 65535 and confirm with **ENTER**; the instrument will supply the corresponding analogue value in output.
To exit the test confirm twice with **ENTER** the same entered value.

<< SEr. >> SERIAL PORTS TEST
By pressing **ENTER** it's possible to redirect the data received by any serial port, on other serial ports.

<< SEr.nuM >> SERIAL NUMBER
Diagnostics check for use of the manufacturer.

<< P.tESt >> PRINTOUT TEST
By pressing ENTER the display shows FMT XX in which XX is the number of the printout format. Once the number has been entered, by pressing ENTER it's possible to execute a test printout of the selected format, with fixed weight values. By entering the value "00" it's possible to print all the formats in sequence.

<< Ev.LoG >> EVENTS VIEWER
Press ENTER to access to the step and then press F6 or F7 to select the type of events:
 - METRIC (calibration, equalisation)
 - BATTERY (power on, power off, power change)
 - KEYBOARD (pressed keys in the setup environment)
 - SETUP (default, setup modification, backup restore)
 - FW UPDATE (firmware update)
Then, by pressing ENTER, the display shows the corresponding list. It's possible to scroll the last 10 events of each type.

3.3 CALIBRATION

In case of various connected scales, each of them must be calibrated on its own, with its own capacity, division and unit of measure.

In case of various digital cells / channels, in addition to the calibration, one must carry out the equalisation.

3.3.1 CALIBRATION PROCEDURE

```
SETUP
ENVIRONMENT ──┬── LAnG
              │
              ├── (*) nuM.SCA ── (!) N.SC. 1 … N.SC. 8 (*) ── CELtyP ── Cells Number ── DGX functioning mode (§) ── SEt.485 ── Number of DGX cells (§)
              │                                                 │            │                │                        │              │
              │                                          Analog, DGX,    1, 2...16      (!) J.boX,              XX             XX
              │                                          RCD, CCI AD,                   M.CELLS
              │                                          RC3D, C16i,                        │                    │
              │                                          WWS                          Number of              Serial
              │                                                                       DGX (§)                number
              │                                                                           │                    │
              │                                                                          XX            XXXXXXXXXX
              │
              ├── F.ModE
```

- EquAL. (§)
- PArAM. ── (*) StAbiL.(§) ── SLW.0 (!) – 3, H.R.0, H.R.1, FLT 0 – 3, DYN.0 - 1, DOS.0 – 3, H.R.2 – 7, DYN.2 – 3, FLT.OFF, FLT.AV2, R.ADC D, R.ADC S, Custom
           ── (*) Auto 0 ── (!) ENABLED, DISABLED, CYCLIC (§)
           ── (*) 0.PErC ── (!) 02
           ── (*) 0.trACk ── (!) TR.1/2, TR.1, TR.2, TR. no, TR.1/4
           ── (*) diV.Stb. ── 00, … (!) 02, ... 99

SEtuP ── ConFiG ── SEL. SCA ──

- (*) GrAV ── 9,75001 … 9,84999
- (*) CALib. ── dECiM. ── (!) 3, no, 1, 2
             ── u.M. ── (!) KG, G, Lb, t
             ── nuMbEr oF rAnGE ── 1 / 2 / 3 ── rAnGE tYPE ── M.rAnGE, M.diViS
             ── diV. 1 ── (!) 1, 2, 5, 10, 20, 50, 100, 200
             ── CAP.1 ── (!) 100 … 999999
             ── diV. 2
             ── CAP.2
             ── diV. 3
             ── CAP.3
             ── CALib.P
             ── PointS
- (*) 0.CALib
- (*) thEo.CA
- (*) AdJ.CEL (§)

diAG.

1) Enter the Setup of the instrument;
(upon start-up, press for an instant the **TARE** key while the instrument version is displayed)

2) Set the number of used channels; enter in the **nuM.SCA** step and select with the ▼ ▲ arrow keys:
   - **N.SC. 1**
   - **N.SC. 2**
   - **N.SC. 3**
   - **N.SC. 4**
   - **N.SC. 5**
   - **N.SC. 5**
   - **N.SC. 7**
   - **N.SC. 8**

   and select the type of cells used and the number of digital cells / analogue channels connected for each scale.

3) Enter in the configuration menu of the calibration, in other words **SEtuP >> ConFiG>> CALib.** and press **ENTER**.

4) Select the scale to be configured with the ▼ ▲ keys (only if **nuM.SCA** > **1**) and press **ENTER**.

5) Execute the equalisation (only in case of more digital cells / channels connected to the scale), like described in section "CELL EQUALISATION PROCEDURE".

6) Select the calibration menu, in other words **CALib.** and press **ENTER**.

7) Set the number of calibration decimals: select the **dECiM.** step and press **ENTER**, with the ▼ ▲ keys move the decimal point in the desired position and press **ENTER**.
   (!) 100

8) Set the unit of measure: select the **u.M.** step and press **ENTER**, with the ▼ ▲ keys select the unit of measure: grams (- g -), kilograms (- kg -), tons (- t -) or pounds (- lb -) and press **ENTER**.
   (!) kg

9) Select the number of calibration range (the LCD display shows in sequence the "SELECT THE NUMBER OF RANGES" message): if there is only one measuring range, select 1 and confirm with **ENTER;** with various fields (up to 3), the type of functioning will be requested (the display shows in sequence the message RANGE.T): select "M.Range" (if a multirange scale) or "M.Divis" (if a multidivisional scale) and confirm with **ENTER**.

10) Set the division of the scale or the division of the first range: select the **diV. 1** step and press **ENTER**, with the ▼ ▲ keys select the value (1, 2, 5, 10, 20, 50, 100, 200) and press **ENTER**.
    (!) 1

11) Set the capacity of the scale or the first range: select the **CAP.1** step and press **ENTER**, set the value (minimum 100 maximum 999999) and press **ENTER**.
    TAKE NOTE: enter the whole value including the decimal digits; for example if the capacity should be over 6 kg and the division 0.001kg (= 1 g), set 6000, or if the capacity should be 1500 kg and the division 0.5 kg, set 15000.
    (!) 100

    NOTE: if the range number set in step 9) **is equal to 1, pass directly to point** 16)

12) Set the division of the second range: select step **diV. 2** and press **ENTER**, with the ▼ ▲ keys select the value (1, 2, 5, 10, 20, 50, 100, 200) and press **ENTER**.
    (!) 1

13) Set the second range: select step **CAP.2** and press **ENTER**, set the value (minimum 100 maximum 999999) and press **ENTER**.

    NOTE: if the range number set in step 9) **is equal to 2, pass directly to point** 16)

14) Set the division of the third range: select step **diV. 3** and press **ENTER**, with the ▼ ▲ keys select the value (1, 2, 5, 10, 20, 50, 100, 200) and press **ENTER**.
   (!) 1

15) Set the third range: select step **CAP.2** and press **ENTER**, set the value (minimum 100 maximum 999999) and press **ENTER**.

16) Carry out the acquisition of the calibration points: select the **CALib.P** step and press **ENTER**.
   The instrument will request the following in this order:

   Number of signal linearization points: the "CALIBRATION POINTS" message will appear followed by " 1 "; enter the value (from 1 to 8 points, besides ZERO) and press **ENTER**.

   ZERO point: the message "UNLOAD THE SCALE AND PRESS ENTER" appears; unload the scale and press **ENTER**.

   First linearization point: "Point 1" message will appear followed by the request to enter the value of the calibration weight; enter the value with the numeric keyboard and press **ENTER**. It will be requested to put the calibration weight on the scale (display LCD) and to press **ENTER**.

   Following calibration points: as the above.

17) if various scales need to be calibrated, press the **C** key twice until the display show "SEL.SCA", select the following scale to be calibrated and repeat all the operations from point 4).

   If, on the other hand, the calibration is finished, press various times the **C** key until the instrument asks for saving and confirming with **ENTER**.

3.3.1 CALIBRATION PROCEDURE OF WIRELESS PLATFORMS (WWSRF) CONNECTED TO 3590EKR
The calibration of the WWSRF platforms connected to the 3590EKR indicator can be executed in two different modes:
it is possible to calibrate every single platform and then receive the configurations on the repeater, or it is possible to calibrate the platforms by executing the operations on the 3590EKR instrument.

3.3.1.1 CALIBRATION EXECUTED ON THE 3590EKR
In the case in which the calibration of the WWSRF platforms requires the use of sample weights having dimensions such that it is not possible to operate on the built-in indicator, it is necessary to follow this procedure that allows to execute the calibration of each platform directly from the 3590EKR indicator:
   1) For each indicator of the platforms, enter in the SET-UP environment (when turned on, press the TARE key for an instant while the version is displayed) and set the 485 address in the **SEtuP** >> **SEriAL** >> **CoM.PC** >> **PCModE** >> **485** step: the entered value corresponds to the number of the channel associated to that platform.
      Enter in the **SEtuP** >> **ConFiG** >> **CALib** step and configure the capacity of the WWSRF by setting the steps "dECi" (number of decimals), "u.M." (unit of measure), "diV" (scale division), "rAnGE1" (capacity value).
   2) Press many times the C key until the indicator displays "SAVE?": confirm with ENTER to store.
   3) Enter in the SET-UP environment of the 3590EKR (when turned on, press the TARE key for an instant while the version is displayed).
   4) Enter in the **<< nuM.SCA >>** step and select with the ▼ ▲ keys the number of platforms that have to be calibrated; confirm with ENTER. Then set the type of each cell on "DIGITAL WWS".
   5) Enter the MACHINE CODE related to the 3590EKR: one has to set a value greater than the number of WWSRF platforms connected. Then set the OFFSET ADDRESS with the value 00. Once this value has been confirmed, the display shows the message "GET WWS CONFIG?". Press ENTER, then select with the ▼ ▲ keys "ENABLED" in the **"radio"** parameter and confirm. One is asked to enter the radio channel: enter the value with the numeric keyboard and press ENTER. The instrument receives the configuration parameter of the platforms (for each platform the "R.CFG.X" message is displayed on the LCD display).

   NOTE: by setting in the offset address a value different than 00, it's possible to receive the configuration of

a lower number of platforms. For example if the system consists of four platforms having the addresses 01, 02, 03 and 04 and one wants to use only the last two platforms, one has to select only two platforms in the step **<< nuM.SCA >>** and set 02 as OFFSET ADDRESS. In this way the scale 1 and 2 will be respectively those with the address 03 and 04.

6) Press various times the C key until the instrument displays "SAVE ?" and confirm with ENTER to store.

7) To calibrate a platform from the 3590EKR instrument, one has to enter in the SET-UP environment of the corresponding built-in indicator while the weight repeater is on: the "REMOTE SETUP MANAGEMENT" message is displayed on the LCD display of the repeater; in the LED display the steps of the setup environment of the WWSRF are shown. The keys pressed on the 3590EKR are repeated on the indicator of the platform.

8) Enter in the **SEtuP >> ConFiG >> CALib.P** step:
   - the "ntP"step is displayed, press ENTER, select with the ▼ ▲ keys the number of calibration points and confirm with ENTER.
   - enter in the "tP0" (scale zero point) step: unload the scale and wait a few seconds, then press ENTER.
   - select the "ddt1" (setting first sample weight) step; press ENTER, enter the weight value and confirm with ENTER.
   - select the "tP1" (acquisition of first sample weight) step: put the weight on the platform, wait a few seconds and press ENTER.
   - if there are various calibration points, repeat the operations for the "ddt2", "tP2", "ddt3", "tP3" points.

9) Once the calibration has been executed, press many times the C key until the indicator displays "SAVE?": confirm with ENTER/PRINT to store and return to weighing.

10) Repeat the 6), 7) and 8) points of this procedure for each connected platform.

11) Enter in the **<< nuM.SCA >>** step in the SET-UP environment of the 3590EKR and press the C key, the display shows the message "GET WWS CONFIG?". Press ENTER to receive the calibrations of the platforms.

12) Press many times the C key until the indicator displays "SAVE?": confirm with ENTER to store.

3.3.1.2 CALIBRATION EXECUTED ON THE INDICATOR OF THE WWSRF

It's possible to calibrate each WWSRF by executing the operations on the built-in indicator and then receive the calibration of all the platforms on the 3590EKR:

1) For each platform, follow the points 1), 8) and 9) of the procedure described in the previous section (3.3.2.1).

2) Enter in the SET-UP environment of the 3590EKR (when turned on, press the TARE key for an instant while the firmware version is displayed).

3) Enter in the in the **<< nuM.SCA >>** step and select with the ▼ ▲ keys the number of platforms that have to be configured; confirm with ENTER. Then set the type of each cell on "DIGITAL WWS".

4) Follow the points 5) and 6) of the procedure described in the previous section (3.3.2.1).

3.3.3 LINEARISATION POINTS

By entering in the **SEtuP >> ConFiG >> CALib >> PointS** step it's possible to access a menu which allows to view/modify the linearization points of the last calibration made:

KEYS' FUNCTIONS

F1	inserts a linearization point
F2	deletes a linearization point.
F3	copys a linearization point (waiting stability).
F4	copys ADC.POINT data (waiting stability).
F5	quickly copys ADC.POINT data (without waiting stability).
F6	scrolls forward the points.
F7	scrolls backward the points.
F8	moves cursor from right to left to select parameter, and press **ENTER** key, one is asked to enter desired value.
F9	moves cursor from left to right to select parameter, and press **ENTER** key, one is asked to enter desired value.
2nd F	switches from points to mV or vice versa.
HELP	shows the keys function.
ENTER	modifies a point (weight and converter points); while entering it confirm the values.
C	exits the programming; one is asked to save (the display shows "ACTIVATE NEW CALIBATION ?"): with **ENTER** one confirms, with another key one exits without saving. While entering a code, it quickly zeros the present value.

3.3.4 ZONE OF USE DIFFERENT THAN THE ZONE OF CALIBRATION:

If the zone of use is different than the calibration zone, one should:

1) Enter in the Set-up of the instrument;
   (upon start-up, press for an instant the **TARE** key while the instrument version is displayed)

2) Enter in the configuration menu of the metric parameters, in other words, **SEtuP >> ConFiG** and press **ENTER**.

3) Set the calibration zone: enter in the **GrAV** step and set the gravitational acceleration value of the CALIBRATION ZONE.

4) Execute the calibration, following the procedure shown in section "CALIBRATION".

5) Set the zone of use: enter in the **GrAV** step and set the gravity acceleration value of the ZONE OF USE.

6) Press various times the C key until the instrument asks to save and confirm with **ENTER**.

7) The weight error caused by a different gravity attraction value between the zone of calibration and the zone of use is automatically corrected.

3.3.5 QUICK ZERO CALIBRATION
Useful for calibrating only the ZERO point when a permanent tare weight is put on a platform (for example a roller unit).

1) Enter in the instrument set-up;
   (upon start-up, press for an instant the **TARE/ZERO** key while the instrument version is displayed)

2) Enter in the configuration menu of the metric parameters, in other words, **SEtuP >> ConFiG** and press **ENTER**

3) Select the scale to be configured with the ▼ ▲ keys (only if **nuM.SCA** > **1**) and press **ENTER**.

4) Select the **0.CALib** step and press **ENTER**; the message "UNLOAD THE SCALE AND PRESS ENTER" appears."

5) Put the preset tare to be cleared on the scale or unload the scale and press **ENTER**.

6) Once the calibration has taken place, the LCD display shows the message "ZERO CALIBRATION EXECUTED": by pressing ENTER/PRINT, the instrument displays the **thEo.CA** step; if one needs to calibrate other scales, press the **C** key, select the next scale to be calibrated and repeat all the operations from point 2.

If, on the other hand, the calibration is done, press various times the **C** key until the instrument asks to save and confirm with **ENTER**.

3.3.6 CELL EQUALISATION PROCEDURE

NOTE: - this procedure may be selected only if various digital cells / channels are connected to the scale.
- for this procedure it is advisable to use a weight of at least 1/3 of the capacity.

1) Enter in the instrument set-up;
(upon start-up, press for an instant the **TARE** key while the instrument version is displayed).

2) Enter in the configuration menu of the metric parameters, in other words **SEtuP >> ConFiG** and press **ENTER**.

3) Enter in the equalisation step: select the **EquAL** step and press **ENTER**. The display shows "SurE?": confirm with **ENTER** in order to reset the previous memorised equalisation and proceed with the **cell equalization**. By pressing the **C** key one can exit the equalisation.

4) The message "UNLOAD THE SCALE AND PRESS ENTER" will appear (zero equalization): unload the weighing system and press **ENTER**.

5) The message "LOAD CELL 1" will appear (first cell equalization): put a calibration weight on the connected cell and press **ENTER**.

6) The message "LOAD CELL 2" will appear (second cell equalization): put **the same calibration weight** on the connected cell and press **ENTER**.

7) Repeat the previous operation, if requested, on each connected cell.

8) Return to step 8) of section "CALIBRATION PROCEDURE".

NOTE: in case of equalisation error, one will be required to repeat the entire procedure.

3.3.7 ADJUSTMENT OF EQUALIZATION COEFFICIENT

It's possible to adjust the equalization coefficients in order to correct a possible weight error.

1) Select the **SEtuP >> ConFiG >> AdJ.CEL** step and press **ENTER**.

2) One will be requested to execute the new equalisation ("SURE?"). Press **ENTER** to confirm or **C** to exit.

3) With the **F8** and **F9** keys choose the cell for which one wants to correct the coefficient: the LCD display shows the cell number and the selected coefficient, next to it; on the other hand, the LED display shows the total weight on the scale.

4) Put one calibration weight on the connected scale.

5) With the **F6** and **F7** keys it's possible to increase / decrease the suggested coefficient; the weight in the LCD display will be modified consequently.

6) Return to step 3) to modify another cell coefficient.

At the end of all the operations:

a) Press **ENTER** to exit and save all the changes (the LCD display will show the "EXIT & SAVE?"message: press **ENTER** to exit and confirm the changes; press **C** to stay in this step); or:
b) Press **C** to cancel all the changes (the LCD display will show the "EXIT & ABORT?" message: press **ENTER** to exit and cancel all the changes; press **C** to stay in this step).

3.3.8 SETTING THE COMMUNICATION WITH DIGITAL CELLS

Premise: Only load cells of the same model and the same capacity can compose two digital platforms.
In the case in which one chooses a digital cell type in the **CELtyP** step, the following operations are required:

1) Check the correct matching of the ComAuX to the COM3 in the step **SEtuP >> SEriAL >> PortS**.

2) Enter in the **<< nuM.SCA >>** step and select the number of scales with the ▼ ▲ arrow keys. Then one has to set the type of cells in the **<< CELtyP >>** step and select the number of digital cells / analogue channels connected for each scale. The selection of a digital load cell type sets the correct communication parameters with the cells (see **SEtuP >> SEriAL >> CoM.AuX** step. Moreover **ProtoC** must be set as **nonE**).

3) In case of DGX conversion card selected as load cell type, it will be required to select the functioning mode.

4) Select "Multicells mode" in order to enable the conversion into digital of each single analogue load cell connected to all the DGX cards.

5) It will be possible to enter the number of DGX cards that are used to convert the total load cells forming ALL THE SCALES. **EXAMPLE**: with DGX8 conversion boxes one has to consider 2 cards for each used conversion box (for example with 2 DGX8, set 4 DGX cards).

6) If the type of selected digital cells allows it, the display shows the **<< 485 ADDRESS >>** step : press **ENTER** to access setting of the 485 address of each load cell / DGX.

7) The first address is proposed, confirm with ENTER and set the first cell / DGX card serial number.
The last entered serial number is proposed for that address.
In the case of DGX conversion card selected as load cell type, after the serial number confirmation it will be possible to enter the number of load cells connected to that conversion card.
Press **ENTER** to choose the next address and repeat the operations, or **C** to exit the step.

8) Once all the connected cells have been assigned, the message "-END-" will appear; by pressing the **C** key it will be required to send the configuration; confirm with **ENTER** or press **C** to cancel.

   The indicator informs with an acoustic signal and the text "Error" if:
   a. The **SEtuP >> SEriAL >> rEAdEr** step is set as **CoM.AuX**;
   b. One tries to enter an address with a value greater than the cell number set in the **<< CELtyP >>** step;
   c. The serial number is wrong or not corresponding to the ones of the connected cells;
   d. The entered serial number is the same of the one of a cell already connected to the indicator with another 485 code. Correct the serial numbers till all of them are confirmed with "- oK -".
   e. The serial number is correct but:
      ▪ The type of cell set is wrong (see the **<< CELtyP >>** step);
      ▪ The assignment of the indicator ports is wrong (see the **SEtuP >> SEriAL >> PortS** step);
      ▪ The cell communication parameters are wrong (moreover **ProtoC** must be set as **none**, see **SEtuP >> SEriAL >> CoM.AuX** step);
      ▪ There are some problems with the physical connection of the cells (expecially check the terminal connections and the cell power supply);
   f. The number of total load cells or the number of the load cells connected to a DGX is wrong.

   In case of error, the LCD display shows the "rEtry?" message and it's possible to press **ENTER** in order to repeat the operation; otherwise, press **C** to exit the step.

9) Return to step 7) of section "CALIBRATION PROCEDURE".

3.3.9 THEORETICAL CALIBRATION

Premise: it's possible to use this procedure if one does not have a sample weight available for carrying out a real calibration.

1) Follow the steps described in section "CALIBRATION PROCEDURE" up to point 17;
2) Select the **SEtuP >> ConFiG >> thEo.CA** step and press **ENTER**;
3) It twill be requested if proceed with the new calibration ("SurE?"). Press **ENTER** to confirm, or **C** to cancel.
4) <u>Set the cell capacity</u>
   Enter the cell capacity (the unit of measure is the one configured for the scale: minimum value scale capacity, maximum value 999999) and confirm with **ENTER**.
5) **In case of analogue cells:**
   <u>Set the cell sensivity in mV/V</u> :
   Enter the cell sensivity in mV/V (max 99.99999 mV/V) and confirm with **ENTER**.
   In case of various connected cells through the junction box, enter the average of the value; in case of dependent channels, enter the sum of the value.
   In case of digital cells:
   <u>Set the cell points at the full range capacity</u> :
   Enter the full range capacity digital value (see the load cell datasheet:
   minimum value is double the scale capacity, maximum value 9999999) and confirm with **ENTER**.

At the end of the calibration, the display shows the message "CALIBRATION EXECUTED" and automatically exits the step, applying the new calibration.

4. DISPLAY OF THE GRAVITY ACCELERATION AND CORRECTION OF THE WEIGHING ERROR due to the different gravity acceleration between calibration zone and utilisation zone

This instrument conforms to the laws currently in force regarding non-automatic weighing instruments.
Such g-sensitive instruments are influenced by the gravitational acceleration value "**g**" of the utilisation zone, hence it is compulsory to indicate, with a label or on the display, the value of "**g**" of the utilisation zone where the weighing machine can be used.
Therefore a special programme has been created to compensate for any differences in the gravitational attraction between the place where the weighing machine is calibrated and the place of utilisation, eliminating in this way the error entered on the weight.
During configuration the "**g**" values relative to the utilisation zone and to the zone of calibration are entered at a certain programming step which eliminates the weight error introduced by the different gravitational attraction value.
When turned on, by pressing the **2ndF** key, the instrument displays the "g" value relative to the gravitational zone of use for a few seconds, after the name and the installed software version.

5. SERIAL OUTPUTS

The indicator is fitted with three serial ports, both having the output in ASCII code compatible with a wide range of printers, remote displays, PCs and other devices; in the SET-UP ENVIRONMENT one is allowed to match these ports with any available configuration ("ComPC", "ComPrn" and "ComAux"), in order to satisfy the most varied applications.
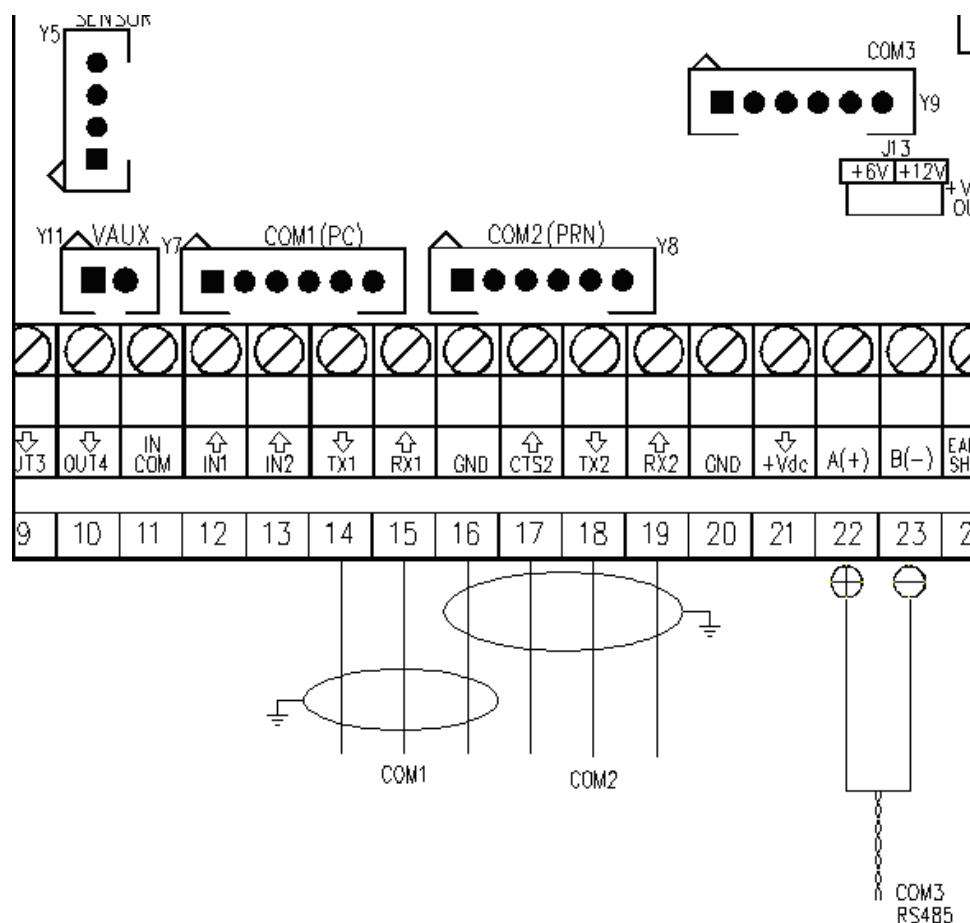
Signal	AMP Connector		Terminal board		
	COM1/COM3 (RS232)	COM2 (RS232)	COM1 (RS232)	COM2 (RS232)	COM3 (RS485)
TX	1	1	14	18	22 A(+)
RX	2	2	15	19	23 B(-)
GND	6	6	16	16	-
CTS	2	3	15	17	-

By the step **SEtuP >> SEriAL >> PortS** it is possible select the function of the serial ports:

Parameter	COM 1	COM 2	COM 3
PC.Pr.AX (!)	ComPC	ComPrn	ComAux
PC.AX.Pr	ComPC	ComAux	ComPrn
Pr.PC.AX	ComPrn	ComPC	ComAux
Pr.AX.PC	ComPrn	ComAux	ComPC
AX.PC.Pr	ComAux	ComPC	ComPrn
AX.Pr.PC	ComAux	ComPrn	ComPC

ComPC: data transmission/reception to PC/PLC, printer, repeater.

ComPrn: data transmission to printer, repeater.

ComAux: data transmission/reception to printer, repeater, remote scale, barcode reader, digital cells.

!! IMPORTANT !!
THE CONNECTION AND THE SOFTWARE CONFIGURATION OF THE SERIAL PORTS MUST BE MADE BY TECHNICAL PERSONNEL WHO KNOWS THE PROCEDURES ON THE BASIS OF THE USER'S NEEDS.
The data transmission cable must be kept away from the AC power supply lines.
!! REMOVE VOLTAGE BEFORE OPENING THE INSTRUMENT !!

THE STANDARD CONFIGURATION OF THE SERIAL PORTS IS THE FOLLOWING:
Baud rate = 9600, Parity = None, Data word = 8, Stop bit = 1, CTS signal = No Cts. The configuration may be modified in the SET-UP environment in the **<< SEriAL >>** step.

5.1 RS 485 CONNECTION

IMPORTANT:
- **Respect the electrical precautionary measures indicated in section "REQUIREMENTS FOR AN OPTIMAL INSTALLATION".**
- **In the case of digital load cells connection read carefully and apply what is described in chapter "DIGITAL LOAD CELLS".**

Below is the RS485 connection of the indicator in the CoM3:

Meaning	Indicator Serial line
TX+/RX+	22 A(+)
TX-/RX-	23 B(-)

On the same RS 485 line it's possibile to connect up to 32 devices, among indicators, digital load cells, 485/232 signal converter.
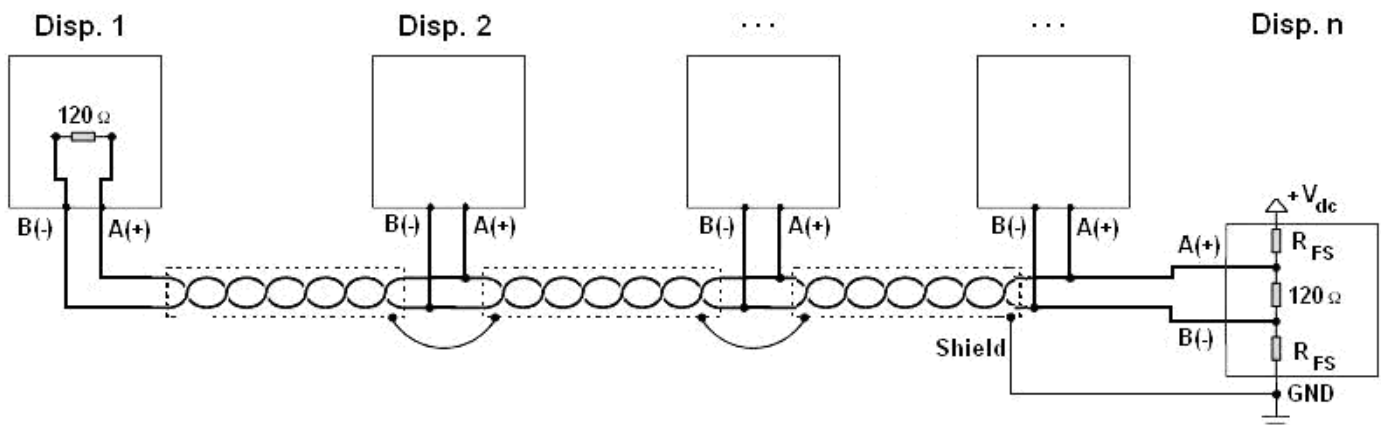
Figura 1: electrical diagram of RS485 connections.

- Use a **STP** (Shielded Twisted Pair) cable in order to make the connection (twisted and shielded pair/s with single shielding for each pair through aluminium band and total shielding through external sheathing).

- The maximum reachable length from the line with the use of the appropriate cable for RS 485 connections, the twisted 2x24 AWG duplex cable, shielded with external sheathing + aluminium band, is of about 1200 meters (see section "MAXIMUM CABLE LENGTH").

- With very long cables, the cable capacity (normally near 50pF/m) starts being a dominant factor in the power consumption and increases with the increase of speed.

This implies that **the maximum distance can not be covered with the maximum possible speed**. For an approximate value, one can consult the following table:

Baud rate	Total capacity of the cable (pF)
1200	400000
2400	200000
4800	100000
9600	50000
19200	25000
38400	12000
57600	8000
115200	4000

As a general rule, if one has any doubts, it is always preferable to **choose the cable with a greater section.**

- Verify that the grounding satisfies the requirements of section "EARTHING SYSTEM". Especially, all the digital masses, as well as the analogue masses, and the power circuits, must be connected to the grounding bar and this last one must be connected to the grounding pole.

- The shielding can be connected into a single point of the entire network (as shown in Figure 1) or both its ends, however it's important that all the masses have the same potential, in order to avoid the forming of current rings.

- On the RS485 network normally one connects 2 termination resistances equal to the characteristic impedance of the cable (tipically 120 Ω, see Figure 1), ONLY on the 2 devices which are at the 2 ends of the cable. The terminal resistance is not supplied with the ports of the indicator.

- The difference of potential between the A(+) and B(-) terminals in rest conditions (for example with instrument in set-up phase), must be of at least 0,2 V.

- To create a resistive divider which maintains this difference of potential also when all the transmitters are disabled, inert in the RS485 port of the indicator where there are the termination resistances, the polarisation or fail-safe resistences (RFS in Figure 1). The value of these resistances is between 390 Ω and 2,2 kΩ.

  NOTE: in particular, the value of each of these resistances must be greater than the value calculable through the formula:

$$R_{FS} = \frac{R_{eq}}{2} \times \left(\frac{V_{dc}}{0,2} - 1 \right)$$

  in which:
  - V_{dc} is the power supply voltage of the line
  - R_{eq} is the overall resistance to the A(+) a B(-) heads, supplied by the parallel of the 2 termination resistances and all the input resistances of the devices connected to the bus.

  FOR EXAMPLE:
  Presuming that a connection has 120 Ω as termination resistance and 32 connected devices, each having an input impedance of 12 kΩ. The V_{dc} power supply is 5 V.
  One calculates R_{eq} , equal to about 52 Ω, and R_{FS} which must be at least equal to 624 Ω.

- The connection between the indicator and the digital load cells is made with RS485 protocol in the COM3 configured as CoMAuX. The indicator can be connected with up to 16 digital load cells.

- It's possible to connect the indicator to digital load cells with 485 4-wire protocol through 422/232 converter. In this case one is required to connect the double TX of RS422 cable to TX+ and TX- converter's pins and the double RX of RS422 cable to RX+ and RX- converter's pins

- In case of connection with non Dini Argeo devices, there may be different ways of line marking: generally one presumes that the A/B indication corresponds to the +/- and HI/LO markings, but this is not always true. Therefore, if the device does not function, one should try inverting the connections even if everything seems to be correct.

- For the correct functioning of the digital load cells, one should, in any case respect all the rules given in the relatvive specific manuals.

5.2 PC CONNECTION

9 PIN CONNECTOR

INDICATOR	9 pin Collector	Color
TX	2	Pink
RX	3	Yellow
GND	5	Grey

RJ45 CONNECTOR

INDICATOR (RJ45 connector)	9 pin Collector	Color
TX 6	2	Orange
RX 3	3	Blue/White
GND 5	5	Green/White

5.3 PRINTER CONNECTION

INDICATOR	WTY280 /SMT80 9pin (female)	TMU295 /LX300 25pin (female)	LP542 Plus /TTP243/SMTPLUS 9pin (female)	Standard cable
TX	3	3	3	Pink
CTS	4	20	8	Brown
GND	7	7	5	Grey

INDICATOR	TPR	STANDARD CABLE
GND	GND	Black
CTS	CTS	Yellow
TX	RX	Grey

TPR printer power supply		
	STANDARD CABLE	Terminal box
+VP e +VC	Red and Orange	5 Vaux
GND e GND	Black and Black	16 GND

5.4 TRANSMISSION PROTOCOLS

STANDARD   [available in ComPc, ComPrn, ComAux]
The weight data transmission on the serial port happens in the following format:
[CC]HH,KK,PPPPPPPP,UM<CR LF>

In which: **[CC]** = instrument code, es.00 (only with RS485 protocol)

HH =   UL   Underload
           OL   Overload
           ST   Weight stability
           US   Weight instability

,   Comma character

KK =   NT   Net Weight
           GS   Gross Weight

,   Comma character

PPPPPPPP = Weight (8 digits including the possible sign and decimal point).

,   Comma character

UM =   Unit of measure (Kg, g, t, lb)

<CR LF>   Carriage Return + Line Feed
                 (ASCII Characters 13 and 10)

AF STRING   [available in ComPc]
The weight data transmission on the serial port happens in the following format:
[CC]SS,B,LLLLLLLLLLUM,YYTTTTTTTTTTUM<CR LF>

in which: **[CC]** = instrument code, es.00 (only with RS485 protocol)

SS   UL   Underload
           OL   Overload
           ST   Weight stability
           US   Weight instability

,   Comma character

B   Scale Number

,   Comma character

LLLLLLLLLL   Gross weight (10 digits including the possible sign and decimal point).

UM =   Unit of measure (Kg, g, t, lb)

,   Comma character

YY   2 spaces if the tare is automatic
            PT if a tare is pre-set or set manually

TTTTTTTTTT   Tare weight (10 digits including the possible sign and decimal point).

UM =   Unit of measure (Kg, g, t, lb)

<CR LF>   Carriage Return + Line Feed
                 (ASCII Characters 13 and 10)

DINI ARGEO REPEATER   [available for ComPc, ComPrn, ComAux]
Transmission protocol for connection to a Dini Argeo weight repeater. It transmits the weight value shown on the LED
display to the Dini Argeo weight display.
NOTE: In this case, the setting of the **SEtuP >> SErIAL >> CoM PC >> PC.ModE** parameter has no relevance.

LCD REPEATER   [available in ComPc]
With this transmission protocol, it is possible to repeat the messages shown on the LCD display.
The data is transmitted in the following format:

XXXXXXXXXXXXXXXXYYYYYYYYYYYYYYYY + CR + LF

in which:	**XXXXXXXXXXXXXXXX**	=	Data shown on the first line of the LCD display
	YYYYYYYYYYYYYYYY	=	Data shown on the second line of the LCD display
	CR	=	Carriage Return
	LF	=	Line Feed

MONODIRECTIONAL   [available for ComPc]
Through this communication protocol the serial command management is excluded, in order to avoid possible responses to data received from the port in case of use of the 485 serial line; it can be useful when one uses the port for transmitting a printout, and various devices are connected on the same 485 line. With this protocol the data and serial command reception is disabled.

ALIBI MEMORY   [available in ComPc, ComPrn]
If the indicator is fitted with the alibi memory, one should set this parameter in order to store the weighs using the print key and transmitting the string through the PC serial port; see the protocol specifications in the "ALIBI MEMORY" section in the user manual.
Furthermore, by enabling the protocol on the ComPC, a string containing the weighing data memorized, will be transmitted.

NOTE: in the ComPrn the string will not be transmitted.

SMA   [available for ComPc]
Serial communication protocol of the Scale Manufacturers Associations (SMA). See relative manual.

MODBUS   [available for ComPc]
See the relative manual.

PROFIBUS   [available for ComPc]
The 485 address is the code which identifies the instrument among those connected in the PROFIBUS transmission mode. See the relative manual.

MULTI – REPEATER   [available in ComPc, ComPrn]
Through this communication protocol is possible to configure up to five weight repeater so that each they shows differt information.
Transmit string:

01PPPPPPP + CR + LF
02SSSSSSS + CR + LF
03XXXXXXX + CR + LF
04YYYYYYY + CR + LF
05ZZZZZZZ + CR + LF

in which:
01,02,03,04,05	repeater address
PPPPPPP	gross weight on 7 digits (including sign and decimal point) of the scale 1
SSSSSSS	gross weight on 7 digits (including sign and decimal point) of the scale 2
XXXXXXX	gross weight on 7 digits (including sign and decimal point) of the scale 3
YYYYYYY	gross weight on 7 digits (including sign and decimal point) of the scale 4
ZZZZZZZ	data display on 7 digits on LED display (including sign and decimal point)

If the number of connected scales is less than 4, dashes are transmitted for each of the scales that are not used.

REPEATER DC   [available in ComAux]

This protocol can coexist with the communication with digital cell and only match with AUX serial line; selected the protocol, one is asked to set configuration of each connected platform, selectable parameters are:

NO	the relative data is never sent
ONLY IF SELECTED	the relative data is sent only if select the platform
ALWAYS	the data is sent independently from the selection

In this way it's possible to have **N** displays which can be used for the current data on a platform or the sum of data on all platforms.

Example: if one wants to use 5 displays, one for each platform, and one for the continuous display of the sum, one has to set the display code at 1 (for platform 1), 2 (for platform 2), 3 (for platform 3), 4 (for platform 4) and 5 (for the platforms' sum). Depending on the selection made in the setup it will be possible to view the weight: always, never, or only when the platform is selected.

5.5 TRANSMISSION MODES

Data transmission from PC Serial Port can be done in 5 different ways:

TRANSMISSION ON REQUEST   [available in ComPC]

It requires an external command from the PC to send the data requested. Transmission can take place at any time requested.

CONTINUOUS TRANSMISSION   [available in ComPC, ComPrn, ComAux]

- ComPC: Continuous transmission of the standard string (**ProtoC** = **StAnd** step), or of the extended AF0X string (**ProtoC** = **AF0X** step) or continuous transmission of the personalised string.
            This mode is used for interfacing with computers, remote displays and other devices that require a constant update of data regardless of weight stability (10 transmissions per second with Baud rate at 9600 and stable weight).
- ComPrn: The indicator transmits continuously the data configured in the 01 print format.
            Alternatively, by setting only the "300" block in the 01 print format, it is possible to transmit the STANDARD STRING (or the AF0X STRING, if configured for the PC port).
            For configuration details of the print formats, see section "PROGRAMMING THE PRINTOUTS".
- ComAux: The weight transmission on the serial port takes place with the STANDARD protocol.

TRANSMISSION ON STABILITY   [available in ComPC]

Transmission is automatic each time the weight put on the platform reaches stability ("~" pilot light off); the minimum transmission limit is of 10 divisions with a NON APPROVED instrument and 20 divisions with an APPROVED instrument. The reactivation of the transmission takes place depending on how the **F.ModE >> rEACt** "REACTIVATIONS" parameter of the SET-UP environment has been set (passage by zero of the net weight or weight instability).

RS485 TRANSMISSION   [available in ComPC]

On Com3 is available a RS485 Half Duplex serial output, enabling the possibility of bi-directional communication up to 63 indicators to just one computer.

The transmission protocol is the same as that of transmission upon request, with the adding of a code that identifies the weight indicator (i.e. "00READ <CR LF>")

5.6 SERIAL COMMANDS FORMAT

LEGEND	
[CC] o <II>	Instrument code, e.g. 00 (only with RS485 protocol)
<CR LF>	Carriage Return + Line Feed (ASCII characters 13 and 10)
<ESC>	ASCII character ASCII 27
<STX>	ASCII character ASCII 02
b	Space character, ASCII 32.

SERIAL ERRORS	
Upon each serial command received the instrument transmits a string containing the answer (see the command description) or it transmits one of the following indications:	
OK<CR LF>	It is shown when a correct command is transmitted from the PC to the indicator. The OK answer does not imply that the instrument executes the zero.
ERR01<CR LF>	It is shown when a correct command is transmitted from the PC to the indicator however it is followed by letters inserted involuntarily (I.E.: READF, TARES…).
ERR02<CR LF>	It is shown when a correct command is transmitted from the PC to the indicator, but containing wrong data.
ERR03<CR LF>	It is shown when a non allowed command is transmitted. It may be a command not used in the selected functioning mode or the command reaches the indicator in the instant in which the keyboard buffer is already occupied by another command.
ERR04<CR LF>	It is shown when an inexistent command is transmitted.
NOTE: The instrument doesn't transmit any indication with the short commands, like the ones made up of only one letter and then the possible parameter.	

COMMANDS

Version reading: **[CC]VER<CR LF>**
Instrument's answer: [CC]VER,vvv,E-AF03**bb**<CR LF>
in which: vvv is the firmware version

Data reading: **[CC]READ<CR LF>** or: **[CC]R<CR LF>**
Instrument's answer: see section "TRANSMISSION PROTOCOLS".

Semiautomatic tare: **[CC]TARE<CR LF>** or: **[CC]T<CR LF>**

Preset tare: **[CC]TMANTTTTTT<CR LF>** or: **[CC]WTTTTTT<CR LF>** (short command)
in which: W= command
         TTTTTT = tare in ASCII, max 6 characters
         Example: W10.0 <CR LF>

Checked tare: **[CC]TAREB<CR LF>**
Instrument's answer: [CC]OK<CR LF>:   tare executed
         [CC]KO<CR LF>:   tare is not allowed (tare disabled, weight instability, weight in overload, etc.)

Zero: **[CC]ZERO<CR LF>** or: **[CC]Z<CR LF>**

Checked zero: **[CC]ZEROB<CR LF>**
Instrument's answer: [CC]OK<CR LF>: zero executed
         [CC]KO<CR LF>: zero is not allowed (weight instability, weight in overload, etc.)

Clear: **[CC]CLEAR<CR LF>** or: **[CC]C<CR LF>**

Reading of extended weight string: **[CC]REXT<CR LF>**

Instrument's answer:

[CC]B,hh,NNNNNNNNNN,YYTTTTTTTTTT,PPPPPPPPPP,MMMMMMMMMM,uu<CR LF>

in which:	[CC] =	INSTRUMENT CODE IN THE FORMAT OF TWO ASCII DECIMAL DIGITS ONLY WHEN THE 485 PROTOCOL IS SELECTED (FOR EXAMPLE 00)
	B =	scale number (zero for the remote scale)
	hh =	UL Underload
		OL Overload
		ST Stability of the display
		US Instability of the display
	NNNNNNNNNN =	net weight on 10 characters including sign and decimal point
	YY =	"PT" if the tare weight is entered with the keyboard, otherwise YY = " " (two space characters) if the tare weight is weighed
	TTTTTTTTTT =	tare weight on 10 characters including sign and decimal point
	PPPPPPPPPP =	always 0
	MMMMMMMMMM =	always 0
	uu =	Unit of measure "Kg" "**b**g" "**b**t" "lb"
	CR =	Carriage Return (ascii character decimal code 13)
	LF =	Line Feed (ascii character decimal code 10)

Net/Gross change: **[CC]NTGS<CR LF>**

Instrument's answer: [CC]OK<CR LF> if the command NTGS has been RECEIVED.

                                           [CC]ERR04<CR LF> if the entire command is wrong.

Print: **[CC]PRNT<CR LF>** or: **[CC]P<CR LF>**

Checked print: **[CC]PRNTB<CR LF>**

Instrument's answer: [CC]OK<CR LF>: print executed

                                           [CC]KO<CR LF>: print is not allowed (weight instability, print not reactivation, cts error, etc.)

Scale switch: **[CC]CGCHn<CR LF> or[CC]Qn<CR LF>**

in which: n = scale number (from 1 to 4)

                                        Example:Q1+CR

Reading the number of entered articles and total articles: **[CC]NREC00<CR LF>**

Instrument response: [CC]NREC,0,0003,0100<CR LF>

In which :	0=	article index
	0003=	the number of entered articles
	0100=	the number of total articles

Reading the content of entered article: **[CC]RREC,0,0001<CR LF>**
Instrument response: [CC]RREC,0,0001 + content<CR LF>
in which: 0=   database index
                             xxxx=   number of the article
Instrument's answer: [CC]RREC,0,xxxx,content,CC<CR LF>
in which: 0=   database index
                             xxxx=   number of the article
The content consists of the following fields, in this order:
                                           description 1;
                                           description 2;
                                           description 3;
                                           description 4;
                                           description 5;
                                           initial value of the analogue output;
                                           PID error;
                                           PID error sum;
                                           flow rate target;
                                           dosage target;
                                           dosed weight;
                                           number of dosages
                             CC=   checksum

Example:
Command: [CC]RREC,0,0001<CR LF>
Instrument's answer:
RREC,0,0001,DESCR.1;D.2;TEXT3;D.4;DESCR. 5;300;0;0; 25.8;   1.500;   6.042;8;,30
Note: the dimension of some fields depends on the number of digits/characters inserted in the corresponding parameters;
these fields are: description 1, description 2, description 3, description 4, description 5, initial value of the analogue output,
PID error, PID error sum, number of dosages.

Reading the selected article number: **[CC]GREC00<CR LF>**
Instrument response: [CC]GREC,0,0003<CR LF>
In which :   0=   article index
                             0003=   the article 3 has been selected

[CC]GREC,0,XXXX<CR LF>   if the article had not been selected

in which: 0=   database index
                             XXXX=   number of selected article

Selection of an entered article: **[CC]SREC,0,0003<CR LF>**
In which :   0=   article index
                             0003= selecting / deselecting article 3 (premise: article 3 has been entered)

Instrument's answer:
[CC]SREC,0,xxxx,OK<CR LF>   if the article had been entered
[CC]SREC,0,xxxx,KO<CR LF>   if the article had not been entered ,

in which: 0=   database index
                             xxxxx=   number of the article

Deselection of the selected article: **[CC]SREC,0,9999<CR LF>**
Instrument's answer:
[CC]SREC,0,9999,OK<CR LF>

in which: 0=   database index

Reading text sections of custom language tool: **[CC]TSECT<CR LF>**
Instrument response: [CC]12<CR LF>
in which: 12 = the indicator have 12 text sections.

If "TSECT" is followed by 2 digits (from 00 to 11), it will show index name of each text section.

Temporary view of message on the display:
                       [CC]DISPNNVVVVVV<CR LF>
in which: NN: display number of the indicator, standard 00 (ASCII hex)
                                  V: character to be displayed (at least 1, cut off at the number of characters which
                                  may be viewed by the indicated display)
The message remains for the time configured through the DINT command; if one selects to view the message permanently
on a display and one wants to cancel the operation, transmit the DISPNN command without any message: the display,
specified in the command (NN) goes back to view the usual information relative to the selected functioning mode.

Setting a display viewing interval:
                       [CC]DINTXXNNNN<CR LF>
in which: XX: code which identifies the display (00 for LED, 01 for LCD)
                                  NNNN: visualisation interval (in milliseconds), N is an ASCII hex character; for
                                  example, to set a visualisation time of 2 seconds (therefore 2000 milliseconds),
                                  which converted into hex become 07D0, the command becomes
                                  DINT0007D0<CR><LF>.

By setting NNNN = 0000, the transmitted message with the DISP command (see above) remains permanently viewed on
the selected display.

With approved instrument
- for the display 00 (LED display), the maximum settable time is 5 seconds (5000 milliseconds, HEX 1388), one should
  wait for the end of an eventual current visualisation before viewing a following one.

Reading of converter points relative to the weight: **[CC]RAZF<CR LF>**
Instrument's answer: [CC]SS,RZ,RRRRRRRRRR,vv<CR LF>
In which: SS   UL   Underload
                                          OL   Overload
                                          ST   Stability of the weight
                                          US   Instability of the weight
                                    RRRRRRRRRR   Value of converter points (10 characters)

Reading of microvolts relative to the weight: **[CC]MVOL<CR LF>**
Instrument's answer: [CC]SS,VL,MMMMMMMMMM,uv<CR LF>
In which: SS   UL   Underload
                                          OL   Overload
                                          ST   Stability of the weight
                                          US   Instability of the weight
                                    MMMMMMMMMM   Value of microvolts (10 characters)

Reading of net weight with sensitivity times 10:   **[CC]GR10<CR LF>**
Instrument's answer: [CC]SS,GX,VVVVVVVVVV,UM<CR LF>
In which: SS   UL   Underload
                                          OL   Overload
                                          ST   Stability of the weight
                                          US   Instability of the weight
                                    GX   Weighing times 10 status
                                    VVVVVVVVVV   Value of net weight times 10 (10 characters)
                                    UM   Unit of measure (Kg, g, t, lb)

NOTE: The instrument does not transmit the OK answer to the short commands (R, T, Z, P….).

Modification of GR10 command response: **[CC]GR10X<CR LF>**
in which: GR10= command
                                                    X→ **E** enabled
                                                    X→ **D** disabled
                                                    Example: GR10E<CR LF>

If enabled, it modifies the format of the GR10 command response string: it responds to the GR10 command with the number of the active scale in the place of the "GX – weighing status x 10").

The setting is valid when the indicator is turned off. To save it permanently in the instrument one should transmit the command in the set-up status.

Setpoint command: **[CC]STPTnFxxxxxxOyyyyyy<CR LF>**
 in which: n, expressed in hexadecimals, indicates the number of SETPOINTS (1, 2, 3, 8, 9, A, B, C, D, E, F).
                                                    F : the following weight value indicates the DISABLING of the relays (OFF).
                                                    O : the following weight value indicates the ENABLING of the relays (ON).
                                                    xxxxxx and yyyyyy take on the enabling or disabling setpoint value: the digits must be entered WITHOUT decimal point, omitting the NON significant zeros.

Example in case of instrument with 10,000 kg capacity and 1 g division:
Command : **STPT1F5000O6500** (Disabling of first relay at 5 kg and enabling at 6,5 kg)
Answer: **OK**
NOTE: Negative answer in the following conditions:
- one of the two entered values surpasses the capacity.
- one of the two entered values has a minimum division which is incongruent with the one set in the instrument.
- the disabling value surpasses the enabling one.

AFXX type string reading and scale information: **[CC]RALL<CR LF>**
Instrument's answer:
[AFXX string] B,NNNNNNNUM,LLLLLLLUM,SSS,AAA,CCC,TTT,XXXXX-YYYYYY<CR LF>
dove:
B   Number of platform on which the totalisation has been made.
NNNNNNNUM   Last net weight totalized with unit of measure.
LLLLLLLUM   Last gross weight totalized with unit of measure.
SSS   Scale status: 000 start-up
                                         001 weighing
                                         002 selection of functioning mode
                                         003 generic menu
                                         004 set-up menu
                                         005 user menu
                                         006 exit from set-up
                                         007 Update Firmware status
                                         008 setting of user default
                                         009 setting of technical default
                                         010 switch channel
                                         011 setting of technical default
                                         012 Test of the PC serial ports
                                         013 Test of the PRN serial ports
AAA   Counter of pressed keys.
CCC   Code of last key pressed.
TTT   Counter of totalisations.
XXXXX   Last rewriting number stored in the Alibi memory.
YYYYYY   Last weigh number stored in the Alibi memory.

Reading of the instrument serial number: **[CC]SN<CRLF>**

Instrument's answer: [CC]SN: XXXXXXX<CRLF>

In which:

         XXXXXX   serial number (can have more than 6 digits)

Reading of the board information: **[CC]BOARD<CRLF>**

Instrument's answer:

[CC]LOADER: aaa, BOARD ID: bbb, BOARD REV: ccc, HWCFG: ddd, SN: xxx, BOARD NAME: nnn<CRLF>

In which:	aaa	loader version in hex form (e.i. 203 for loader 2.03)
	bbb	board ID (numeric value)
	ccc	board revision (numeric value)
	ddd	hardware config. (numeric value)
	xxx	serial number
	nnn	board name (up to 8 characters)

5.7 ADVANCED COMMANDS

[GKBB] Reading of the data in the keyboard buffer:

This following command allows for **the reading of the data in the keyboard buffer (max 20 keys)** (only if the transmission of the pressed keys code is disabled):

Syntax

Format	**<ESC><II>GKBB<STX>**
Parameters	**-**
Answer	**- <ESC><II>OK<STX> if the buffer is empty** **- If the buffer is not empty, two hexadecimal characters for each key, in the order in which these have been pressed, from left to right.**
Example	**<ESC>01GKBB<STX>**
Result	**If for example, with empty keyboard buffer, the 1, 2, 3, 4, 5, 6 keys have been pressed, the instrument answer will be the following**: **<ESC>0B**0C**0D**0E**0F**10**<STX>**

NOTE: the reading of the keyboard buffer causes the cancellation.

[EKBB] Cancellation of the data inside in the keyboard buffer:

With this command it is possible to **cancel the contents of the keyboard buffer** (only in the case in which the transmission of the pressed keys' code is disabled):

Syntax

Format	**<ESC><II>EKBB<STX>**
Parameters	**-**
Answer	**<ESC><II>OK<STX>**
Example	**<ESC>01EKBB<STX>**
Result	**Cancellation of the keyboard buffer**

[OUTP] Enabling/disabling of the relay output:

Syntax

Format	<ESC><II> OUTPNVVVV <STX> or <ESC><II> OUTPNNVVVV <STX>

Parameters	- N = output number (expressed in hexadecimals)
	  - 0 to enable simultaneously all the outputs
	  - from 1 to 4 to identify the single output of the motherboard from 8 to F
	   to identify the same output of the expansion board
	- NN= output number (expressed in hexadecimals)
	  - 00 to enable simultaneously all the outputs
	  - from 01 to 04 to identify the single output of the motherboard and
	   from 08 to 0F to identify the single output of the expansion board
	  - 10 to enable the 12 output (OUT12) of the expansion board.
	- VVVV = enabling/disabling code;
	  - for the single output, V = 0000 disabled, while V = 0001 enabled.
	  - all the outputs (in other words, N = 0), the value identifies the outputs
	   to be enabled
	   (expressed in hexadecimals);

Response	<ESC><II>OK<STX> **The response does not imply that the command has been made.**
Example	<ESC>01OUTP00412<STX> or <ESC>01OUTP000412<STX>
Result	Configuration of the outputs (see below the suggested explanation)

A bit is ascribed to each relay:

Expansion board outputs (optional)													Motherboard outputs		
OUT 16	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 9	OUT 8	OUT 7	OUT 6	OUT 5	OUT 4	OUT 3	OUT 2	OUT 1
Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0

The bit at 1 is interpreted as active output, while the bit at 0 as disabled relay.

If, for example, one wants to enable the **OUT5, OUT11** outputs of the Expansion board and **OUT2** relay of the motherboard relays, the binary combination will be:

Expansion board outputs (optional)													Motherboard outputs		
OUT 16	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 9	OUT 8	OUT 7	OUT 6	OUT 5	OUT 4	OUT 3	OUT 2	OUT 1
Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0

Which, in hexadecimals, corresponds to the number 0412; therefore the command will be OUTP00412 + CR + LF or OUTP000412 + CR + LF.

NOTES:
- The set point enabling command does not work neither in the set-up environment nor in the weighing phase; if the output function is different than "nonE". (**SEtuP >> outPut >> r.COnF.** step, **rLFunC** parameter).

[INPU] Optoisolated input reading

Syntax

Format	<ESC><II>INPU<N><STX>

Parameters	N = input number (expressed in hexadecimals):
	  - 0 to simultaneously read all the inputs.
	  - from 1 to 2 to identify the single input of the Motherboard and from 3 to 8 to identify the single input of the Expansion board.

Answer	<ESC><II>INPUNVVVV <STX>
	N = input number (expressed in hexadecimals), described previously
	VVVV = input \ inputs status:
	    - for the single input, V = 0000 means input not active, while V = 0001 active input
	    - for all the inputs (in other words N = 0), the returned value corresponds to the hexadecimal codification of the status of the inputs

Example	<ESC>01INPU0 <STX>
Result	Reading of indicator's inputs' status (see the following explanation).

A bit is ascribed to each input:

Not managed bits								Expansion board inputs (optional)						Motherboard inputs	
								in.8	in.7	in.6	In.5	in.4	in.3	in. 2	in. 1
Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0

Therefore if the INPU00026 string is received, the hexadecimal value, converted into binary, indicates that the status of the inputs is the following:

Not managed bits								Expansion board inputs (optional)						Motherboard inputs	
								in.8	in.7	in.6	In.5	in.4	in.3	in. 2	in. 1
Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0

The active inputs are therefore **in.6**, **in.3** of the Expansion board and **in.2** of the motherboard.

NOTES:
- With the bits 8 to 15, no input is assigned, and are fixed at zero
- The reading command of the inputs works also in the set-up environment

[INUN] Request of a numeric value entry on the LED display:

Syntax

Format	<ESC><ll>INUN<X><M>,<H>,< l >,<L>,<D>,<P><STX>

Parameters	X = numeric or alphanumeric character (0 – 9 ; A – Z ; a – z) displayable in the digit on the extreme left of the LED display (not modifiable);
	M = minimum enterable value in decimals (0 ≤ M ≤ H)
	H = maximum enterable value in decimals
	  (0 ≤ H ≤ 999'999'999'999'999'999,18 digits).
	I = value displayed initially in decimals, substituted then by the entered one (M ≤ I ≤ H); if the entered value is less than the enterable minimum value (M), the minimum value will initially be displayed (M).
	L = maximum number of enterable characters in decimals
	  (0 ≤ L ≤ 18)
	D = number of decimal digits (in decimals)
	P = initial position in decimals of the blinking digit (in other words the position of the first value to be modified).
	    - if P = 0, the blinking digit is the least significant one
	    - if P = 1, the blinking digit is the most significant one

Answer	<ESC><ll>OK<STX>
Example	<ESC>01INUNt,0,10000,0,5,3,0<STX>
Result	The t 00.000 message appears on the LED display with the least significant digit blinking (underlined), while waiting for the entry of a numeric value

If the entered value is greater or less respectively to the maximum or minimum set value, the instrument will emit an error sound signal.

[INUA] Request of a numeric value entry on the LCD display:

Syntax

Format	<ESC><ll>INUA<CC><LL><I><STX>

Parameters	CC = decimal position from which the entry of the numeric data starts, from left to right.
	LL = number of characters in decimals which make up the numeric data to be entered
	I = selection/unselection of the display of an initial value, previously entered in the user buffer (using the WUBU command described later on):
	    - I = 0 not displayed
	    - I = 1 displayed

Answer	<ESC><ll>OK<STX>
Example	<ESC>01INUA08071<STX>
Result	If preceded by the <ESC>01WUBU1234567<STX> command, it causes the 1234567 message to be shown on the LCD display, with the character 1 blinking, starting from the position 08 of the LCD display (in other words the digit 8). At this point it is possible to set 8 numerical digits which will substitute the displayed ones.

NOTE: If an alphanumeric string is in the buffer, a number of blank spaces corresponding to the number of digits set in LL will be shown on the display, starting from the set cursor position.

[IALA] Request of alphanumeric text entry on the LCD display:

Syntax

Format	<ESC><ll>IALA<CC><LL><I><STX>

Parameters	CC = decimal position from which the entry of the numeric data starts, from left to right.
	LL = number of characters in decimals which make up the alphanumeric data to be entered
	I = selection/unselection of the display of an initial value, previously entered in the user buffer (using the WUBU command described later on):
	    - I = 0 not displayed
	    - I = 1 displayed

Answer	<ESC><ll>OK<STX>
Example	<ESC>01IALA08071<STX>
Result	If <u>preceded</u> by the <ESC>01WUBUABCDEFG<STX> command, it causes the ABCDEFG message to be shown on the LCD display, with the character 1 blinking, starting from the position 08 of the LCD display (in other words the digit 8). At this point it is possible to set 8 numerical digits which will substitute the displayed ones.

When exiting the entry phase, the displayed data is frozen on the LCD display and it remains until a new serial command does not switch the visualisations (for example a DISP command or a new visualisation entered with the INUA or IALA commands, previously described).
The turning off causes the restoration of the standard weight data.

[GINR] Reading of entered data:
GINR + CR + LF

Syntax

Format	<ESC><ll>GINR<STX>
Parameters	-

Answer	Entry of value on the LED display case:
	   - - 1 if one exits from the entry phase with the C key;
	   - Entered value in decimals and confirmed with ENTER;
	Entry of value on LCD display case:
	   - 2 if one exits from the entry phase with the C key;
	   - 1 if the value has been entered and confirmed with ENTER
	To read the entered string, use the <ESC>RUBU<STX> command described later on

Example	<ESC> 01GINR<STX>
Result	Reading of the user buffer and transmission of the data read on the PC

Reading and writing of the user buffer:
Premise: the user buffer is the memory area in which the temporary storage of entered data is used (using the indicator keyboard) by the user or made visible by the user.
The previous request commands on the display of data entry, taking advantage of this buffer.

[WUBU] Reading of the user buffer:

Syntax

Format	<ESC><II>WUBU<AAA...A><STX>
Parameters	AAA...A is the numeric and/or alphanumeric string (UP TO 32 characters) which are entered in the user buffer
Answer	<ESC><II>OK<STX>
Example	<ESC>01WUBU<ABCDE><STX>
Result	The ABCDE string is stored in the user buffer

IMPORTANT: do not modify the user buffer while the instrument is waiting for the data entry: this operation can cause system malfunctioning, which are eliminated only when the instrument is turned off.

[RUBU] Reading of the user buffer:

Syntax

Format	<ESC><II>RUBU<STX>
Parameters	-
Answer	<ESC><II>AAA...A <STX> In which AAA...A is the numeric and/or alphanumeric string (UP TO 32 Characters), read in the user buffer. If the number of characters is less than 32, blank spaces will be added in order to complete the 32 transmitted characters.
Example	<ESC>01RUBU<STX>
Result	<ESC>01STRING <STX>

[TOPR] Transmission of numeric and/or alphanumeric string to printer:

Syntax

Format	<ESC><II>TOPR<XXX...X> <STX>
Parameters	XXX...X = numeric and/or alphanumeric string which one wants to print
Answer	<ESC><II>OK<STX> The answer does not imply that the command has been made.
Example	<ESC>01TOPRABCDE<STX>
Result	The ABCDE string will be printed

TECHNICAL NOTE: The reception and transmission buffers of the indicator are of 256 bytes; knowing that each transmitted character is equal to one byte, the maximum number of characters which can be transmitted is 248. This value changes depending on the transmitted data.

NOTES:
- It is possible to print numeric and alphanumeric characters (A...Z, a...z, 0...9), for example TOPRABCabc123 + CR + LF
- It is possible to print ASCII characters by entering the corresponding decimal code (on three digits) preceded by the \ character; for example, if one wants to print the message <!!ATTENTION!!>, the command will be the following: TOPR\060\033\033ATTENTION\033\033\062+ CR + LF;
- It is possible to print the print blocks by entering the block number preceded by the \M abbreviation; for example, if one wants to print the block 301 NET WEIGHT (see section "LIST OF PRINT BLOCKS"), 302 GROSS WEIGHT, 303 TARE, the command will be the following: TOPR\M301\M302\M303 + CR + LF
- The command is not enabled if the instrument is approved.

[OIN] Key with which one has exit from the user input
With this command it is possible to know which key the user used to exit the input (ENTER or C).

Syntax

Format	<ESC><II>OIN<STX>
Parameters	-
Answer	<ESC><II>OIN[<KEY> | NO]<STX>
Key	ENT Exited with the Enter key CLR Exited with the Clear key
Example	<ESC>01OIN<STX>
Result	<ESC>01OINENT<STX>

If the command is wrong one will have the <ESC><II>OINNO<STX> message.

Simulation of key pressing:
[CC]KEYPXX<CR LF>
in which XX is the code of the pressed key:

CODE	PRESSED KEY
00	**F1** key
01	**F2** key
02	**F3** key
03	**F4** key
04	**F5** key
05	**F6** key
06	**F7** key
07	**F8** key
08	**F9** key
09	**F10** key
0A	'**0**' numeric key
0B	'**1**' numeric key
0C	'**2**' numeric key
0D	'**3**' numeric key
0E	'**4**' numeric key
0F	'**5**' numeric key
10	'**6**' numeric key
11	'**7**' numeric key
12	'**8**' numeric key
13	'**9**' numeric key
14	**(.)** point key
15	**ZERO** key
16	**ENTER/Fn** key
17	**2ndF** key
18	**C** key

Response of the instrument: OK<CR LF>: command accepted
If the simulated key has two linked functions (key pressed briefly or at length, like the TARE key), if the KEYP command is followed by the key release command (KEYR) within a maximum time of 1,5 seconds, the simple function will be executed (key pressed briefly); otherwise the second function will be executed (key pressed at length).

Command for key release simulation:
[CC]KEYR<CR LF>
Response: [CC]OK<CR LF>

5.8 CUSTOMISATION OF THE STRING [available in ComPC e ComPrn]

Personalise string configuration on the ComPC:
The instrument is able to transmit in a continuous manner or as a response to the READ command on the port linked with ComPC a data string configurable in the 100 print format through Dinitools™. To restore the transmission of the instrument strings, one should configure only block "300".
NOTE: format #100 contains up to 50 macros.

Personalise string configuration on the ComPrn:
The instrument is able to transmit in a continuous manner on the port linked with ComPrn a string of data configurable in the 01 print format.

For further details in regards to configuring the print formats through Dinitools ™ see the relative manual.

6. ANALOGUE OUTPUT (OPTIONAL)

Through an optional interface, it is possible to use an analogue output a 16 bit configurable at 0 – 10V, 0 – 20 mA or 4 – 20 mA.
The voltage and the output current from the interface are proportional to the gross weight or net weight present on the scale. In regards to the electrical connection scheme, see section "ELECTRICAL SCHEMES".

6.1 OPERATING MODES

6.1.1 OUTPUT ON THE GROSS WEIGHT

The value of the analogue output grows proportionally to the gross weight on the scale in relation to the configured value for the gross weight at 0 (AO ZE), and the one configured for the gross weight equal to the capacity (AO MA).
When the gross weight is equal or greater than the capacity, the output takes on the value set for AO MA, while in the underload condition (gross weight <= -100d with approved instrument) the output takes on the value set for AO MI.

Trend examples (approved instrument)

Ⓐ Gross = -100d

Ⓑ Gross = Capacity
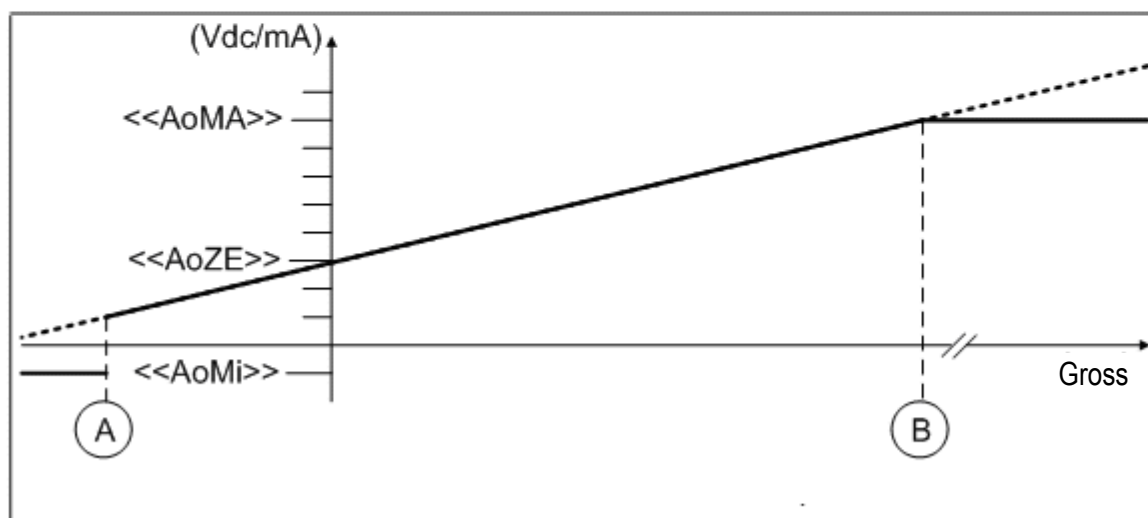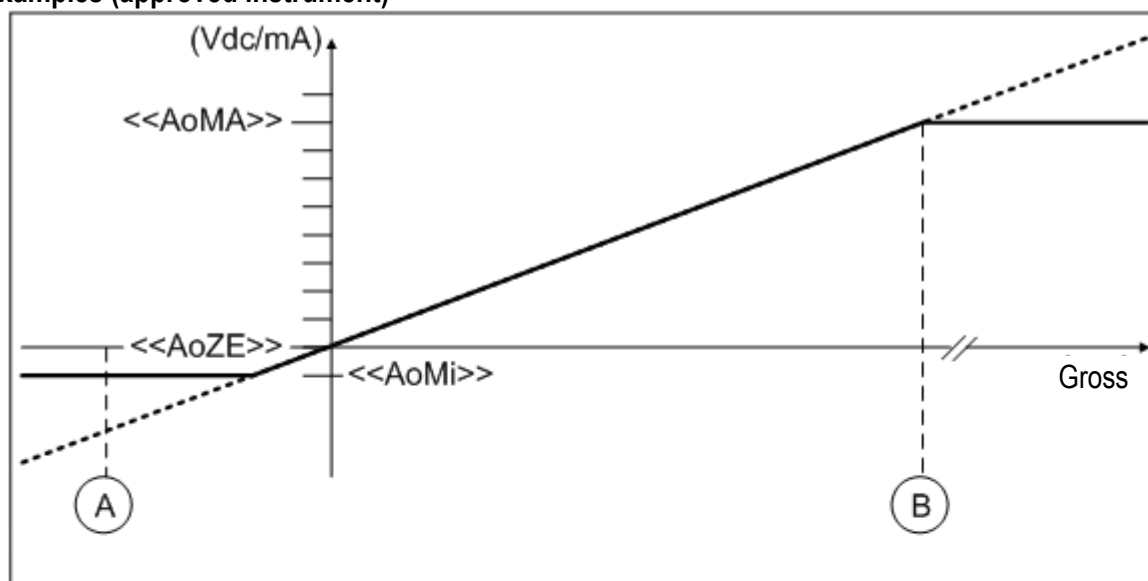
6.1.2 OUTPUT ON THE NET WEIGHT
The value of the analogue output grows proportionally to the net weight on the scale in relation to the value configured for the net weight at 0 (AO ZE), and the one configured fo the net weight equal to the capacity (AO MA).

When the gross weight is equal or greater than the capacity + 9e, the output takes on the value set for AO MA, while in the underload condition (gross weight <= -100d with approved instrument) the output takes on the value set for AO MI.

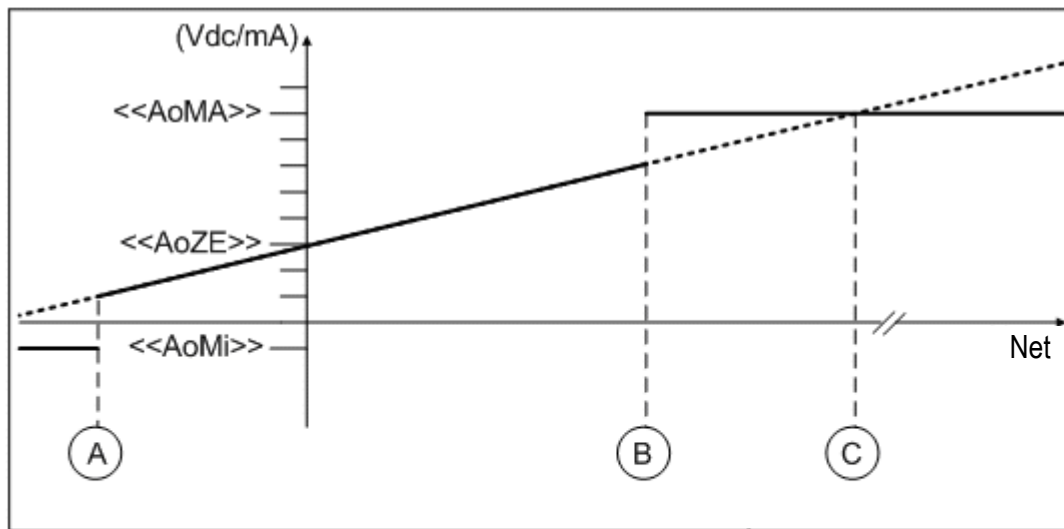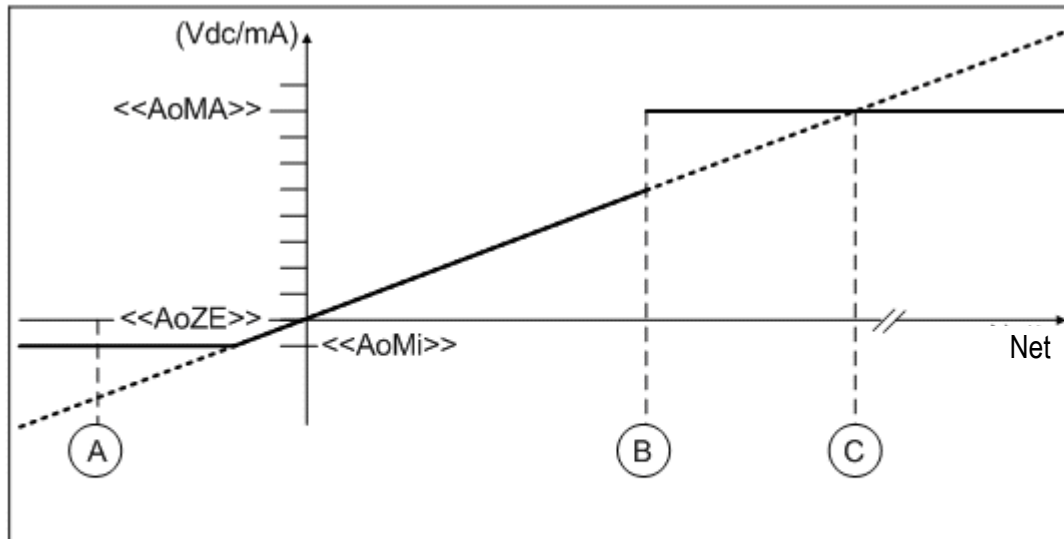**Trend examples (approved instrument)**

A) Gross = -100d

B) Gross = Capacity + 9e

C)   Net = Capacity

6.2 CONFIGURATION

In order to configure the parameters, one needs to enter the SET-UP environment in the **Anout** step inside the **SEtuP** menu:

If various scales are connected (see the **nuM.SCA** parameter), the number of the scale to be configured, will be requested; the configurations within this menu must be carried out for each connected scale.

SLot SLOT SELECTION
One selects the SLOT to be used with the analogue output: SLOT 1 or SLOT2; it is possible to indifferently use either SLOT.

ModE OPERATING MODE
*A*O G = analogue output on gross weight
AO n = analogue output on net weight

Once the functioning mode is confirmed, one sets the values of the analogue output useful for the calculation in the weighing phase, of the value that the output must take on proportionally; in other words, the digital/analogue converter values are entered (between 0 and 65535) to which corresponds a certain output value in voltage or in current.
In this configuration the instrument keys take on the following meanings (functions):

ENTER	By pressing once after a value is entered, it activates the corresponding output analogue value, (allowing the check) but the step still remains inside in case of a new modification. By pressing a second time (on the same entered value) it confirms and exits the step.
C	Allows to quickly zero the present value.
NUMERICAL KEYS	Allow entering values, from right to left.

AoMA MAXIMUM VALUE
By entering this step, one sets the maximum value of the analogue output, in other words the corresponding value of the full scale capacity. This value can be anywhere between 0 and 65535 (values of the digital/analogue converter); if a higher digit is entered, the instrument emits a prolonged sound, after which it zeros the value just entered.

AoZE SCALE ZERO VALUE
By entering this step, one sets the analogue output value when the scale displays zero weight. This value can be anywhere between 0 and 65535 (values of the digital/analogue converter); if a higher digit is entered, the instrument emits a prolonged sound, after which it zeros the value just entered.

AoMi MINIMUM VALUE
By entering this step, one sets the minimum value of the analogue output. This value can be anywhere between 0 and 65535 (values of the digital/analogue converter); if a higher digit is entered, the instrument emits a prolonged sound, after which it zeros the value just entered.

<u>APPROXIMATE</u> **VALUES BETWEEN THE D/A CONVERTER AND ANALOGUE OUTPUT**

D/A CONVERTER VALUES	VOLTAGE VALUE (V)	CURRENT VALUE (mA)
1070	0	
1375		0
11500		4
52010		20
62450	10	

7. PROGRAMMING THE PRINTOUTS

It is possible to programme 30 different formats to be linked to 11 print functions:

- "S.F.01" function >> print key
- "S.F.02" function >> partial total
- "S.F.03" function >> general total
- …

For the complete list of the functions and the linking of the formats, see the "PRINTOUTS" section of the **USER MANUAL**.

During the printing, the indicator uses the format linked to that printout.

It is possible to configure the formats:
- **through the Dinitools™ software** for PC, and transmitted to the indicator through the serial line; it is necessary that the print format number ("Print Format Number") is a value between 1 and 30 to indicate the format to be overwritten. Once the formats are configured one should carry out the linkages of the interested functions **(USER MAN.REF.)**.
- **manually from the indicator** by entering in the **SEtuP** >> **SEriAL** >> **Prn.FMt** step inside the SET-UP environment.

MANUAL CONFIGURATION OF THE PRINT FORMATS

Each format is made up of a maximum of 2048 memory storages (only the first 1000 are manually modifiable from the indicator), which, when programmed, these will produce the desired printout; in each line one can enter (through a 3-digit code, from 300 onwards) a command named "print block", which will produce a certain type of printout, for example:
PRINT NET WEIGHT (code 301), which will print the net weight value, the unit of measure and the CR or CR LF to go to the next line.
Or it is possible to print a single alphanumeric character, entering the relative ASCII code in the line (from 0 to 255).
To configure a print format:
- Enter in the **SEtuP** >> **SEriAL** >> **Prn.FMt** parameter.
- The display shows:

C.F.   XX   in which:

        XX indicates the number of the format to be modified (from 01 to 30)

- Select the print format to be configured using the arrow keys ▲ ▼ and press the **ENTER** key
- Once entered in a format (for example C.F. 01), the display shows:

XXX.YYY   in which:

        XXX is number of the line which one is programming.
        YYY is the entered code (from 0 to 255 the ASCII code is printed, from 300 onwards the relative block is printed).

- Select the line to be programmed using the arrow keys ▲ ▼ and press the **ENTER** key
- The display shows "CHANGE" for an instant and onwards:

        XXX   in which:

        XXX is the value to be modified.

- Enter a value and press the **ENTER** key to confirm; the **C** key clears the entered value and if pressed again it cancels the operation.
- If a print block with parameters from 600 onwards has been entered, after having pressed the **ENTER** key the displays shows:
        XXX   in which:
        XXX is the value to be modified.

- Enter a valid value and press the **ENTER** key to confirm.
- Once programmed all the desired lines one should enter in the last line block 300 (PRINT END);
- Press the **C** key to exit; the display will show the saving request; press the **ENTER** key to confirm or another key to cancel.

KEYS' FUNCTIONS

▲	scrolls forward inside the lines of the print format.
▼	scrolls backward inside the lines of the print format.
F1	enters a print block or an ASCII character in the selected line moving the consecutive blocks of one place.
F2	cancels the current line compacting the blocks that follow.
F3	enters a print end in the current line.
ENTER	modifies the code in the current line; while entering it confirms the entered code.
C	exits the programming; one is asked to save (the display shows "SAVE?"): with **ENTER** one confirms, with another key one exits without saving. While entering a code, it quickly zeros the present value.
NUMERICAL KEYBOARD	allows entering a code inside of the selected printing line.

NOTES

- For the complete list of the ASCII codes and the print blocks, see the sections "ASCII CODE TABLE" and "LIST OF PRINT BLOCKS".
- To terminate the programming of a format, it is necessary that the last command be "Print end": one should enter the code 300 (or press the **F3** key) in the last line of the format.

PRINTING ON THE PC SERIAL PORT

By programming correctly a format, it is possible to direct the printing on the PC serial port, and then bring it back onto the printer port; the blocks to be used are:
315 (PRINTING ON PC PORT), 316 (PRINTING ON SERIAL PORT), 317 (FORCES THE PRINTING).
The correct syntax in the format is the following:

- **315 PRINTS ON PC PORT**
- prints block or ASCII character
- …
- **317 FORCES PRINTING**
- **316 PRINTS ON PRINTER PORT**
- prints block or ASCII character
- …
- **317 FORCES PRINTING**
- 300 PRINT END

> The "Forces print" block executes the transmission of all the blocks or ASCII characters entered BEFORE the same block; reading block 315, the printout is directed onto the PC port.

> All the blocks or ASCII characters entered here are instead transmitted through the printer serial port.

7.1 PROGRAMMING EXAMPLE

One programmes a format to be linked to a PRINT key function (**S.F.01** function) in this way:

MARIO ROSSI SRL	MARIO ROSSI SRL
Date – time	1/02/2005 – 19:00:00
Gross weight	GROSS 2.000kg
Tare weight	TARE 0.000kg
Net weight	NET 2.000kg
3 blank lines	
Print end	

After having entered in the SET-UP environment, follow the procedures below:
- Enter in the **SEtuP** >> **SEriAL** >> **Prn.FMt** parameter.
- Select the print format to be configured through the arrow keys ▲ ▼ and press the **ENTER** key.
- Select the line to be programmed through the arrow keys ▲ ▼ and press the **ENTER** key.
- The display shows the first line to be programmed; enter the 077 code (ASCII relative to the letter "M"); confirm with **ENTER**.
- The display shows the following line; enter the 065 code (ASCII relative to the letter "A"); confirm with ENTER.
- Repeat the operations by entering the following codes:

082 (letter "R")
073 (letter "I")
079 (letter "O")
032 (space)
082 (letter "R")
079 (letter "O")
083 (letter "S")
083 (letter "S")
073 (letter "I")
013 (terminator CR)
032 (space)
013 (terminator CR)
450 (prints date – time)
013 (terminator CR)
032 (space)
013 (terminator CR)
302 (prints gross weight)
013 (terminator CR)
303 (prints tare weight)
013 (terminator CR)
301 (prints net weight)
013 (terminator CR)
032 (space)
013 (terminator CR)
032 (space)
013 (terminator CR)
032 (space)
013 (terminator CR)
300 (print end)   **** It is possible to enter the print end also with the F3 key ****

- Press the **C** key to exit the programming: the display shows "SAVE?", confirm with **ENTER** (one goes back into the "SERIAL" parameter).
- Exit the SETUP environment of the instrument by pressing the **C** key various times: the display shows "SAVE?", confirm the changes made with **ENTER** (the instrument returns to weighing).

7.2 ASCII CODE TABLE

7.2.1 CODE PAGE 1252 WINDOWS LATIN 1

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	NUL 0000	STX 0001	SOT 0002	ETX 0003	EOT 0004	ENQ 0005	ACK 0006	BEL 0007	BS 0008	HT 0009	LF 000A	VT 000B	FF 000C	CR 000D	SO 000E	SI 000F
10	DLE 0010	DC1 0011	DC2 0012	DC3 0013	DC4 0014	NAK 0015	SYN 0016	ETB 0017	CAN 0018	EM 0019	SUB 001A	ESC 001B	FS 001C	GS 001D	RS 001E	US 001F
20	SP 0020	! 0021	" 0022	# 0023	$ 0024	% 0025	& 0026	' 0027	(0028	) 0029	* 002A	+ 002B	, 002C	− 002D	. 002E	/ 002F
30	0 0030	1 0031	2 0032	3 0033	4 0034	5 0035	6 0036	7 0037	8 0038	9 0039	: 003A	; 003B	< 003C	= 003D	> 003E	? 003F
40	@ 0040	A 0041	B 0042	C 0043	D 0044	E 0045	F 0046	G 0047	H 0048	I 0049	J 004A	K 004B	L 004C	M 004D	N 004E	O 004F
50	P 0050	Q 0051	R 0052	S 0053	T 0054	U 0055	V 0056	W 0057	X 0058	Y 0059	Z 005A	[005B	\ 005C	] 005D	^ 005E	_ 005F
60	` 0060	a 0061	b 0062	c 0063	d 0064	e 0065	f 0066	g 0067	h 0068	i 0069	j 006A	k 006B	l 006C	m 006D	n 006E	o 006F
70	p 0070	q 0071	r 0072	s 0073	t 0074	u 0075	v 0076	w 0077	x 0078	y 0079	z 007A	{ 007B		007C	} 007D	~ 007E	DEL 007F
80	€ 20AC		‚ 201A	ƒ 0192	„ 201E	… 2026	† 2020	‡ 2021	ˆ 02C6	‰ 2030	Š 0160	‹ 2039	Œ 0152		Ž 017D	
90		' 2018	' 2019	" 201C	" 201D	• 2022	– 2013	— 2014	˜ 02DC	™ 2122	š 0161	› 203A	œ 0153		ž 017E	Ÿ 0178
A0	NBSP 00A0	¡ 00A1	¢ 00A2	£ 00A3	¤ 00A4	¥ 00A5	¦ 00A6	§ 00A7	¨ 00A8	© 00A9	ª 00AA	« 00AB	¬ 00AC	00AD	® 00AE	¯ 00AF
B0	° 00B0	± 00B1	² 00B2	³ 00B3	´ 00B4	µ 00B5	¶ 00B6	· 00B7	¸ 00B8	¹ 00B9	º 00BA	» 00BB	¼ 00BC	½ 00BD	¾ 00BE	¿ 00BF
C0	À 00C0	Á 00C1	Â 00C2	Ã 00C3	Ä 00C4	Å 00C5	Æ 00C6	Ç 00C7	È 00C8	É 00C9	Ê 00CA	Ë 00CB	Ì 00CC	Í 00CD	Î 00CE	Ï 00CF
D0	Ð 00D0	Ñ 00D1	Ò 00D2	Ó 00D3	Ô 00D4	Õ 00D5	Ö 00D6	× 00D7	Ø 00D8	Ù 00D9	Ú 00DA	Û 00DB	Ü 00DC	Ý 00DD	Þ 00DE	ß 00DF
E0	à 00E0	á 00E1	â 00E2	ã 00E3	ä 00E4	å 00E5	æ 00E6	ç 00E7	è 00E8	é 00E9	ê 00EA	ë 00EB	ì 00EC	í 00ED	î 00EE	ï 00EF
F0	ð 00F0	ñ 00F1	ò 00F2	ó 00F3	ô 00F4	õ 00F5	ö 00F6	÷ 00F7	ø 00F8	ù 00F9	ú 00FA	û 00FB	ü 00FC	ý 00FD	þ 00FE	ÿ 00FF

7.2.2 CODE PAGE 1251 WINDOWS CYRILLIC

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	NUL 0000	STX 0001	SOT 0002	ETX 0003	EOT 0004	ENQ 0005	ACK 0006	BEL 0007	BS 0008	HT 0009	LF 000A	VT 000B	FF 000C	CR 000D	SO 000E	SI 000F
10	DLE 0010	DC1 0011	DC2 0012	DC3 0013	DC4 0014	NAK 0015	SYN 0016	ETB 0017	CAN 0018	EM 0019	SUB 001A	ESC 001B	FS 001C	GS 001D	RS 001E	US 001F
20	SP 0020	! 0021	" 0022	# 0023	$ 0024	% 0025	& 0026	' 0027	(0028	) 0029	* 002A	+ 002B	, 002C	− 002D	. 002E	/ 002F
30	0 0030	1 0031	2 0032	3 0033	4 0034	5 0035	6 0036	7 0037	8 0038	9 0039	: 003A	; 003B	< 003C	= 003D	> 003E	? 003F
40	@ 0040	A 0041	B 0042	C 0043	D 0044	E 0045	F 0046	G 0047	H 0048	I 0049	J 004A	K 004B	L 004C	M 004D	N 004E	O 004F
50	P 0050	Q 0051	R 0052	S 0053	T 0054	U 0055	V 0056	W 0057	X 0058	Y 0059	Z 005A	[005B	\ 005C	] 005D	^ 005E	_ 005F
60	` 0060	a 0061	b 0062	c 0063	d 0064	e 0065	f 0066	g 0067	h 0068	i 0069	j 006A	k 006B	l 006C	m 006D	n 006E	o 006F
70	p 0070	q 0071	r 0072	s 0073	t 0074	u 0075	v 0076	w 0077	x 0078	y 0079	z 007A	{ 007B		007C	} 007D	~ 007E	DEL 007F
80	Ђ 0402	Ѓ 0403	‚ 201A	ѓ 0453	„ 201E	… 2026	† 2020	‡ 2021	€ 20AC	‰ 2030	Љ 0409	‹ 2039	Њ 040A	Ќ 040C	Ћ 040B	Џ 040F
90	ђ 0452	' 2018	' 2019	" 201C	" 201D	• 2022	– 2013	— 2014		™ 2122	љ 0459	› 203A	њ 045A	ќ 045C	ћ 045B	џ 045F
A0	NBSP 00A0	Ў 040E	ў 045E	Ј 0408	¤ 00A4	Ґ 0490	¦ 00A6	§ 00A7	Ё 0401	© 00A9	Є 0404	« 00AB	¬ 00AC	− 00AD	® 00AE	Ї 0407
B0	° 00B0	± 00B1	І 0406	і 0456	ґ 0491	µ 00B5	¶ 00B6	· 00B7	ё 0451	№ 2116	є 0454	» 00BB	ј 0458	Ѕ 0405	ѕ 0455	ї 0457
C0	А 0410	Б 0411	В 0412	Г 0413	Д 0414	Е 0415	Ж 0416	З 0417	И 0418	Й 0419	К 041A	Л 041B	М 041C	Н 041D	О 041E	П 041F
D0	Р 0420	С 0421	Т 0422	У 0423	Ф 0424	Х 0425	Ц 0426	Ч 0427	Ш 0428	Щ 0429	Ъ 042A	Ы 042B	Ь 042C	Э 042D	Ю 042E	Я 042F
E0	а 0430	б 0431	в 0432	г 0433	д 0434	е 0435	ж 0436	з 0437	и 0438	й 0439	к 043A	л 043B	м 043C	н 043D	о 043E	п 043F
F0	р 0440	с 0441	т 0442	у 0443	ф 0444	х 0445	ц 0446	ч 0447	ш 0448	щ 0449	ъ 044A	ы 044B	ь 044C	э 044D	ю 044E	я 044F

7.2.3 CODE PAGE 1253 WINDOWS GREEK

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	NUL 0000	STX 0001	SOT 0002	ETX 0003	EOT 0004	ENQ 0005	ACK 0006	BEL 0007	BS 0008	HT 0009	LF 000A	VT 000B	FF 000C	CR 000D	SO 000E	SI 000F
10	DLE 0010	DC1 0011	DC2 0012	DC3 0013	DC4 0014	NAK 0015	SYN 0016	ETB 0017	CAN 0018	EM 0019	SUB 001A	ESC 001B	FS 001C	GS 001D	RS 001E	US 001F
20	SP 0020	! 0021	" 0022	# 0023	$ 0024	% 0025	& 0026	' 0027	(0028	) 0029	* 002A	+ 002B	, 002C	- 002D	. 002E	/ 002F
30	0 0030	1 0031	2 0032	3 0033	4 0034	5 0035	6 0036	7 0037	8 0038	9 0039	: 003A	; 003B	< 003C	= 003D	> 003E	? 003F
40	@ 0040	A 0041	B 0042	C 0043	D 0044	E 0045	F 0046	G 0047	H 0048	I 0049	J 004A	K 004B	L 004C	M 004D	N 004E	O 004F
50	P 0050	Q 0051	R 0052	S 0053	T 0054	U 0055	V 0056	W 0057	X 0058	Y 0059	Z 005A	[005B	\ 005C	] 005D	^ 005E	_ 005F
60	` 0060	a 0061	b 0062	c 0063	d 0064	e 0065	f 0066	g 0067	h 0068	i 0069	j 006A	k 006B	l 006C	m 006D	n 006E	o 006F
70	p 0070	q 0071	r 0072	s 0073	t 0074	u 0075	v 0076	w 0077	x 0078	y 0079	z 007A	{ 007B	| 007C	} 007D	~ 007E	DEL 007F
80	€ 20AC		‚ 201A	ƒ 0192	„ 201E	… 2026	† 2020	‡ 2021		‰ 2030		‹ 2039				
90		' 2018	' 2019	" 201C	" 201D	• 2022	– 2013	— 2014		™ 2122		› 203A				
A0	NBSP 00A0	΄ 0385	Ά 0386	£ 00A3	¤ 00A4	¥ 00A5	¦ 00A6	§ 00A7	¨ 00A8	© 00A9		« 00AB	¬ 00AC	00AD	® 00AE	― 2015
B0	° 00B0	± 00B1	² 00B2	³ 00B3	΄ 0384	µ 00B5	¶ 00B6	· 00B7	Έ 0388	Ή 0389	Ί 038A	» 00BB	Ό 038C	½ 00BD	Ύ 038E	Ώ 038F
C0	ΐ 0390	Α 0391	Β 0392	Γ 0393	Δ 0394	Ε 0395	Ζ 0396	Η 0397	Θ 0398	Ι 0399	Κ 039A	Λ 039B	Μ 039C	Ν 039D	Ξ 039E	Ο 039F
D0	Π 03A0	Ρ 03A1		Σ 03A3	Τ 03A4	Υ 03A5	Φ 03A6	Χ 03A7	Ψ 03A8	Ω 03A9	Ϊ 03AA	Ϋ 03AB	ά 03AC	έ 03AD	ή 03AE	ί 03AF
E0	ΰ 03B0	α 03B1	β 03B2	γ 03B3	δ 03B4	ε 03B5	ζ 03B6	η 03B7	θ 03B8	ι 03B9	κ 03BA	λ 03BB	μ 03BC	ν 03BD	ξ 03BE	ο 03BF
F0	π 03C0	ρ 03C1	ς 03C2	σ 03C3	τ 03C4	υ 03C5	φ 03C6	χ 03C7	ψ 03C8	ω 03C9	ϊ 03CA	ϋ 03CB	ό 03CC	ύ 03CD	ώ 03CE	

7.3 LIST OF PRINT BLOCKS

LEGEND:

b   indicates a space character (ASCII 32 decimal character).

UM   unit of measure of the active scale (kg, **b**g, **b**t, lb).

UMD   unit of measure of the database (kg, **b**g, **b**t, lb).

+ T   terminator: depending on the setting of the **SEtuP** >> **SEriAL** >> **tErMin** "SET TERMINATOR TYPE" step of the SET-UP environment, a CR or CRLF,LF or no terminator is added.

XXX*   These blocks do not work without the alibi memory (optional).

The weight field expands from right to left, with many spaces (ASCII 32 decimal character) for completing the field length.

NOTE

- The weight and weighing values expand from from right to left, with the necessary spaces in order to complete the field length.
- The weighing numbers are increased with each input/output weighing cycle or with each single weigh.

7.3.1 ORDER BY KIND

CODE		PRINT FORMAT
	GENERIC	
300	PRINT END	
307	LINE	***********************+ T
308	PRINTS 3 CRLF	
309	DATE / TIME FOR DP24/DP190	**b**HH:MM**b**DD/MM/YY + T
315	PRINTS ON PC PORT	
316	PRINTS ON PRINTER PORT	
317	FORCES PRINTOUT	
363	DATE	DD/MM/YY + T
364	TIME	HH:MM + T
365	DATE TIME	DD/MM/YY**b**HH:MM + T
366	FOLLOWING MACRO TERMINATOR SKIPS	
369	HEADING 1	XXXXXXXXXXXXXXXXXXXXXXXX

in which XXXXXXXXXXXXXXXX are the 24 characters of the first line of the heading; just the entered   characters are printed, from left to right.

370	HEADING 2	XXXXXXXXXXXXXXXXXXXXXXXX
371	HEADING 3	XXXXXXXXXXXXXXXXXXXXXXXX
374	PRINT EMPTY LINE	+ T
375	PRINTS A SPACE	**b**
376	SCALE UNIT OF MEASURE	UM + T
377	DATABASE UNIT OF MEASURE	UM + T
385	STANDARD KD PROTOCOL STRING	
386	AF0X PROTOCOL STRING	

Through the blocks 385 and 386 it is possible to print the STANDARD or AFXX serial string (see section "TRANSMISSION PROTOCOLS" for the description); the terminator of the string depends on the setting of the **SEtuP >> SEriAL >> tErMin** step of the SET-UP environment (CR or CRLF or no terminator).

387	PRINTS SET TERMINATOR	CR or CRLF or NO TERMINATOR
388	RELEASES PAPER FOR TM295	
389	ACTIVATES PAPER PRESENT SENSOR FOR TM295	
390	ACTIVATES TIMEOUT FOR TM295	
391	END PAGE UPSIDE DOWN FOR TM295	

This command causes the ticket to be expelled in the insertion area.

392	ACTIVE SCALE NUMBER	SCALE**b**NUMBER**bbbb**X + T

in which X is the active scale number.

393	JUST ACTIVE SCALE NUMBER	X

in which X is the active scale number.

402	PRINTS TERMINATOR	CR or CRLF or NO TERMINATOR
403	PRINT CALCULATED DATA	XXXXXXXXX
404	PRINT FIRST ENTERED DATA	XXXXXXX
405	PRINTS SECOND ENTERED DATA	XXXXXX
406	PRINTS OPERATION SYMBOL	X

In which X is "+" in case of addition, "-" in case of subtraction, "x" in case of multiplication..

The 403, 404, 405 and 406 blocks refer to the operation executed with the "calculator" function described in section "CALCULATOR", **USER MAN.REF.**.

WEIGHT

301	NET WEIGHT	NET**bbb**XXXXXXXXXXUM + T

in which XXXXXXXXXX is the weight value on 10 digits including the comma; the field expands from right to left.

302	GROSS WEIGHT	GROSS**b**XXXXXXXXXXUM + T
303	TARE WEIGHT	PT**bbbb**XXXXXXXXXXUM + T
372	JUST GROSS ON 10 DIGITS	XXXXXXXXX
373	JUST NET ON 10 DIGITS	XXXXXXXXX
384	ONLY TARE VALUE	XXXXXXXXX
407	SCALE 1 WEIGHT	SCALE**bbbbbb**1XXXXXXXUM

The macro is printed if scale 1 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

408	ONLY SCALE 1 WEIGHT	XXXXXXX
409	SCALE 2 WEIGHT	SCALE**bbbbbb**2XXXXXXXUM

The macro is printed if scale 2 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

410	ONLY SCALE 2 WEIGHT	XXXXXXX
411	SCALE 3 WEIGHT	SCALE**bbbbbb**3XXXXXXXUM

The macro is printed if scale 3 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

412	ONLY SCALE 3 WEIGHT	XXXXXXX
413	SCALE 4 WEIGHT	SCALE**bbbbbb**4XXXXXXXUM

The macro is printed if scale 4 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

414	ONLY SCALE 4 WEIGHT	XXXXXXX
482	SCALE 5 WEIGHT	SCALE**bbbbbb**5XXXXXXXUM

The macro is printed if scale 5 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

483	ONLY SCALE 5 WEIGHT	XXXXXXX
484	SCALE 6 WEIGHT	SCALE**bbbbbb**6XXXXXXXUM

The macro is printed if scale 6 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

485	ONLY SCALE 6 WEIGHT	XXXXXXX
486	SCALE 7 WEIGHT	SCALE**bbbbbb**7XXXXXXXUM

The macro is printed if scale 7 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

487	ONLY SCALE 7 WEIGHT	XXXXXXX
488	SCALE 8 WEIGHT	SCALE**bbbbbb**8XXXXXXXUM

The macro is printed if scale 8 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

| 489 | ONLY SCALE 8 WEIGHT | XXXXXXXX |
| 415 | WEIGHT SUM ACTIVE SCALE | SUM **b**XXXXXXXXUM |

The macro is printed if the sum of the scales is displayed.

416	ONLY WEIGHT SUM FOR ACTIVE SCALES	XXXXXXXX
470	TARE WEIGHT ON PARTIAL TOTAL	PT**bbbbbbbb**XXXXXXXXXXUM+T
481	ONLY VALUE TARE ON PARTIAL TOTAL	XXXXXXXXX

PARTIAL TOTAL

| 304 | NET PARTIAL TOTAL | N.YYY**b**T1.N.XXXXXXXX**b**UM |

in which YYY shows the number of weighs, XXXXXXXX the weight value in 8 digits including the comma.

380	JUST WEIGHS PARTIAL TOTAL	XXXXX
381	JUST NET PARTIAL TOTAL	XX…X
469	JUST GROSS PARTIAL TOTAL	XXXXXXXXXX

GENERAL TOTAL

| 305 | NET GENERAL TOTAL | N.YYY**b**T2.N.**b**XXXXXXXX**b**UM + T |
| 367 | JUST GENERAL TOTAL WEIGHS | XXXXXX |

the field expands from right to left with many spaces for completing the field length.

| 368 | JUST NET GENERAL TOTAL | XXXXXXXXXX |

GRAND TOTAL

306	NET GRAND TOTAL	N.YYY**b**T3.N.**b**XXXXXXXX**b**UM + T
382	JUST WEIGHS GRAND TOTAL	XXXXXXXX
383	JUST NET GRAND TOTAL	XX…X

DATABASE

| 310 | JUST 1st DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.

| 311 | JUST 2nd DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.

| 312 | JUST 3rd DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.

| 313 | JUST 4th DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.

| 314 | JUST 5th DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.

WEIGHS LIST

| 450 | PRINT DATE AND TIME WEIGHS ON THE WEIGHS LIST | HH:MM**b**GG/MM/AA + T |

The date and the time of the acquired weight is printed in the weighing list.

| 451 | CURRENT LIST WEIGHS' COUNTER | XXXX |

The field is expressed in four digits, with some zeros to complete the field's length.

| 452 | AXLE COUNTER CURRENT LIST | XXXX |

the field is espresse on four digits, with the zeros for complete the field length.

| 453 | PRINT AXLE WEIGHT ON THE WEIGHS LIST | AXLE**bbbb**XXXXYYYYYYYY+UM |

In which XXXX indicates the axle number and YYYYYYYY the axle weight value weighed.
This block is printed on the list, only if there is an axle weigh.

454	PRINT WEIGHT SCALE 1 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

455	PRINT WEIGHT SCALE 2 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

456	PRINT WEIGHT SCALE 3 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

457	PRINT WEIGHT SCALE 4 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

506	PRINT WEIGHT SCALE 5 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

507	PRINT WEIGHT SCALE 6 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

508	PRINT WEIGHT SCALE 7 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

509	PRINT WEIGHT SCALE 8 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

458	NET PARTIAL TOTAL LIST	XXXXXXXXX
459	GROSS PARTIAL TOTAL LIST	XXXXXXXXX
460	TARE PARTIAL TOTAL LIST	XXXXXXXXX
461	NET TOTAL LIST	XXXXXXXXX
462	GROSS TOTAL LIST	XXXXXXXXX
463	TARE TOTAL LIST	XXXXXXXXX
464	1st DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

465	2nd DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

466	3rd DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

467	4th DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

468	5th DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

471	ONLY THE INPUT 0 TEXT CONTENTS ON THE WEIGHS LIST	XXXXXXXXX

Is print just the input 0 text contents; Are printed only the firsts 10 characters inserted.

472	ONLY THE INPUT 1 TEXT CONTENTS ON THE WEIGHS LIST	XXXXXXXXX

Is print just the input 1 text contents; Are printed only the firsts 10 characters inserted.

473	ONLY THE INPUT 2 TEXT CONTENTS ON THE WEIGHS LIST	XXXXXXXXX

Is print just the input 2 text contents; Are printed only the firsts 10 characters inserted.

474	ONLY THE INPUT 3 TEXT CONTENTS ON THE WEIGHS LIST	XXXXXXXXX

Is print just the input 3 text contents; Are printed only the firsts 10 characters inserted.

476	ONLY SUM WEIGHT ON THE WEIGHS LIST	XXXXXXX
477	ONLY WEIGHT SCALE 1 ON THE WEIGHS LIST	XXXXXXX
478	ONLY WEIGHT SCALE 2 ON THE WEIGHS LIST	XXXXXXX
479	ONLY WEIGHT SCALE 3 ON THE WEIGHS LIST	XXXXXXX
480	ONLY WEIGHT SCALE 4 ON THE WEIGHS LIST	XXXXXXX

BARYCENTRE

430	PRINT X COORDINATE SCALE 1	X1XXXXXXXXXX+UM
431	ONLY X COORDINATE VALUE SCALE 1	XXXXXXX
432	PRINT Y COORDINATE SCALE 1	Y1XXXXXXXXXX+UM

433	ONLY Y COORDINATE VALUE SCALE 1	XXXXXXXX
434	PRINT X COORDINATE SCALE 2	X2XXXXXXXXXX+UM
435	ONLY X COORDINATE VALUE SCALE 2	XXXXXXXX
436	PRINT Y COORDINATE SCALE 2	Y2XXXXXXXXXX+UM
437	ONLY Y COORDINATE VALUE SCALE 2	XXXXXXXX
438	PRINT X COORDINATE SCALE 3	X3XXXXXXXXXX+UM
439	ONLY X COORDINATE VALUE SCALE 3	XXXXXXXX
440	PRINT Y COORDINATE SCALE 3	Y3XXXXXXXXXX+UM
441	ONLY Y COORDINATE VALUE SCALE 3	XXXXXXXX
442	PRINT X COORDINATE SCALE 4	X4XXXXXXXXXX+UM
443	ONLY X COORDINATE VALUE SCALE 4	XXXXXXXX
444	PRINT Y COORDINATE SCALE 4	Y4XXXXXXXXXX+UM
445	ONLY Y COORDINATE VALUE SCALE 4	XXXXXXXX
490	PRINT X COORDINATE SCALE 5	X5XXXXXXXXXX+UM
491	ONLY X COORDINATE VALUE SCALE 5	XXXXXXXX
492	PRINT Y COORDINATE SCALE 5	Y5XXXXXXXXXX+UM
493	ONLY Y COORDINATE VALUE SCALE 5	XXXXXXXX
494	PRINT X COORDINATE SCALE 6	X6XXXXXXXXXX+UM
495	ONLY X COORDINATE VALUE SCALE 6	XXXXXXXX
496	PRINT Y COORDINATE SCALE 6	Y6XXXXXXXXXX+UM
497	ONLY Y COORDINATE VALUE SCALE 6	XXXXXXXX
498	PRINT X COORDINATE SCALE 7	X7XXXXXXXXXX+UM
499	ONLY X COORDINATE VALUE SCALE 7	XXXXXXXX
500	PRINT Y COORDINATE SCALE 7	Y7XXXXXXXXXX+UM
501	ONLY Y COORDINATE VALUE SCALE 7	XXXXXXXX
502	PRINT X COORDINATE SCALE 8	X8XXXXXXXXXX+UM
503	ONLY X COORDINATE VALUE SCALE 8	XXXXXXXX
504	PRINT Y COORDINATE SCALE 8	Y8XXXXXXXXXX+UM
505	ONLY Y COORDINATE VALUE SCALE 8	XXXXXXXX
446	PRINY X COORDINATE BARYCENTRE	XgXXXXXXXXXX+UM
447	ONLY X COORDINATE VALUE BARYCENTRE	XXXXXXXX
448	PRINT Y COORDINATE BARYCENTRE	YgXXXXXXXXXX+UM
449	ONLY Y COORDINATE VALUE BARYCENTRE	XXXXXXXX

JUST TEXTS

417	ONLY WEIGH TEXT	"WEIGH**bbbbb**"
418	ONLY WEIGHS TEXT	"WEIGHS**bbbb**"
419	ONLY PARTIAL TOTAL TEXT	"PARTIAL TOTAL"
420	ONLY GENERAL TOTAL TEXT	"GENERAL TOTAL"
421	ONLY GRAND TOTAL TEXT	"GRAND TOTAL"
422	ONLY TOTAL TEXT	"TOTAL**bbbbb**"
423	ONLY GROSS TEXT	"GROSS**bbbbb**"
424	ONLY NET TEXT	"NET**bbbbbbb**"
425	ONLY TARE TEXT	"TARE**bbbbbb**"
426	ONLT PT TEXT	"PT**bbbbbbbb**"
427	ONLY AXLE TEXT	"AXLE**bbbb**"
428	"PLA.TXT" CONDITIONED DESCRIPTION	XXXXXXXXXX
	It is printed the description that has been inserted on step **PLA.txt**. Only the characters inserted from left to right are printed	
429	ONLY VEHICLE TEXT	"VEHICLE**b**"
475	ONLY SUM TEXT	XXXXXXXXXXX

FREE TEXTS

| 318 | JUST INPUT 0 TEXT HEADING | XXXXXXXXXXXXXXXX |
| | in which XXXXXXXXXXXXXXXX are 16 characters of the input 0 text heading; just the entered characters are | |

printed, from left to right.

319	JUST INPUT 1 TEXT HEADING	XXXXXXXXXXXXXXXX
320	JUST INPUT 2 TEXT HEADING	XXXXXXXXXXXXXXXX
321	JUST INPUT 3 TEXT HEADING	XXXXXXXXXXXXXXXX
322	JUST INPUT 4 TEXT HEADING	XXXXXXXXXXXXXXXX
323	JUST INPUT 5 TEXT HEADING	XXXXXXXXXXXXXXXX
324	JUST INPUT 6 TEXT HEADING	XXXXXXXXXXXXXXXX
325	JUST INPUT 7 TEXT HEADING	XXXXXXXXXXXXXXXX
326	JUST INPUT 8 TEXT HEADING	XXXXXXXXXXXXXXXX
327	JUST INPUT 9 TEXT HEADING	XXXXXXXXXXXXXXXX
328	JUST INPUT 10TEXT HEADING	XXXXXXXXXXXXXXXX
329	JUST INPUT 11TEXT HEADING	XXXXXXXXXXXXXXXX
330	JUST INPUT 12 TEXT HEADING	XXXXXXXXXXXXXXXX
331	JUST INPUT 13 TEXT HEADING	XXXXXXXXXXXXXXXX
332	JUST INPUT 14 TEXT HEADING	XXXXXXXXXXXXXXXX
333	JUST THE INPUT 0 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

in which YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY are 32 characters of the input 0 text contents; just the entered characters are printed, from left to right.

334	JUST THE INPUT 1 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
335	JUST THE INPUT 2 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
336	JUST THE INPUT 3 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
337	JUST THE INPUT 4 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
338	JUST THE INPUT 5 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
339	JUST THE INPUT 6 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
340	JUST THE INPUT 7 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
341	JUST THE INPUT 8 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
342	JUST THE INPUT 9 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
343	JUST THE INPUT 10 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
344	JUST THE INPUT 11 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
345	JUST THE INPUT 12 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
346	JUST THE INPUT 13 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
347	JUST THE INPUT 14 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
348	INPUT 0 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T

in which XXXXXXXXXXXXXXXX are 16 characters of the heading and YYYYYYYYYYYYYYYY are 32 characters of the input 0 text contents, just the entered characters are printed, from left to right.

349	INPUT 1 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
350	INPUT 2 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
351	INPUT 3 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
352	INPUT 4 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
353	INPUT 5 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
354	INPUT 6 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
355	INPUT 7 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
356	INPUT 8 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
357	INPUT 9 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
358	INPUT 10 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
359	INPUT 11 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
360	INPUT 12 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
361	INPUT 13 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
362	INPUT 14 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
400	CANCELLATION OF FREE TEXT CONTENTS	

After their printing, ALL the contents of the free texts present are cancelled.

PROGRESSIVE NUMBERING

378	TICKET PROGRESSIVE	XXXXX

(progressive number that is increased with each input/output weighing cycle and upon each single weigh)

| 379 | LOT PROGRESSIVE | XXXXXX |
| | (number of general total resettings) | |

ALIBI MEMORY

394	JUST NUMBER OF ALIBI MEMORY REWRITINGS	XXXXX
	the field expands from right to left; the non significant zeros will be printed anyways.	
395	LAST NET WEIGHT ON ALIBI MEMORY	XXXXXXXXXX
396	ACTIVE SCALE NUMBER WITH ALIBI MEMORY	XX
397	PRINTS WEIGH ID	XXXXXX
	In which XXXXXX is the ID weighing on 6 digits; expanding from left to right.	
398	ALIBI MEMORY UNIT OF MEASURE	UM
	this block prints the unit of measure of the weigh saved in the alibi memory.	
399	LAST GROSS WEIGHT ON ALIBI MEMORY	XXXXXXXXXX
	in which XXXXXXXXXX indicates the weight value in 10 digits including the comma.	
401	LAST TARE ON ALIBI MEMORY	PTXXXXXXXXXX

7.3.2 NUMERICAL ORDER

CODE   PRINT FORMAT

300	PRINT END	
301	NET WEIGHT	NET**bbb**XXXXXXXXXXUM + T
	in which XXXXXXXXXX is the weight value on 10 digits including the comma; the field expands from right to left.	
302	GROSS WEIGHT	GROSS**b**XXXXXXXXXXUM + T
303	TARE WEIGHT	PT**bbbb**XXXXXXXXXXUM + T
304	NET PARTIAL TOTAL	N.YYY**b**T1.N.XXXXXXXX**b**UM
	in which YYY shows the number of weighs, XXXXXXXX the weight value in 8 digits including the comma.	
305	NET GENERAL TOTAL	N.YYY**b**T2.N.**b**XXXXXXXX**b**UM + T
306	NET GRAND TOTAL	N.YYY**b**T3.N.**b**XXXXXXXX**b**UM + T
307	DOTTED LINE	**********************+ T
308	PRINTS 3 CRLF	
309	DATE / TIME FOR DP24/DP190	**b**HH:MM**b**DD/MM/YY + T
310	JUST 1st DATABASE CONDITIONED DESCRIPTION	XXXXXXXXXXXXXXXXXXXX + T
	in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.	
311	JUST 2nd DATABASE CONDITIONED DESCRIPTION	XXXXXXXXXXXXXXXXXXXX + T
	in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.	
312	JUST 3rd DATABASE CONDITIONED DESCRIPTION	XXXXXXXXXXXXXXXXXXXX + T
	in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.	
313	JUST 4th DATABASE CONDITIONED DESCRIPTION	XXXXXXXXXXXXXXXXXXXX + T
	in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.	
314	JUST 5th DATABASE CONDITIONED DESCRIPTION	XXXXXXXXXXXXXXXXXXXX + T
	in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output.	
315	PRINTS ON PC PORT	
316	PRINTS ON PRINTER PORT	
317	FORCES PRINTOUT	
318	JUST INPUT 0 TEXT HEADING	XXXXXXXXXXXXXXXX
	in which XXXXXXXXXXXXXXXX are 16 characters of the input 0 text heading; just the entered characters are printed, from left to right.	
319	JUST INPUT 1 TEXT HEADING	XXXXXXXXXXXXXXXX

320	JUST INPUT 2 TEXT HEADING	XXXXXXXXXXXXXXXX
321	JUST INPUT 3 TEXT HEADIGS	XXXXXXXXXXXXXXXX
322	JUST INPUT 4 TEXT HEADING	XXXXXXXXXXXXXXXX
323	JUST INPUT 5 TEXT HEADING	XXXXXXXXXXXXXXXX
324	JUST INPUT 6 TEXT HEADING	XXXXXXXXXXXXXXXX
325	JUST INPUT 7 TEXT HEADING	XXXXXXXXXXXXXXXX
326	JUST INPUT 8 TEXT HEADING	XXXXXXXXXXXXXXXX
327	JUST INPUT 9 TEXT HEADING	XXXXXXXXXXXXXXXX
328	JUST INPUT 10TEXT HEADING	XXXXXXXXXXXXXXXX
329	JUST INPUT 11TEXT HEADING	XXXXXXXXXXXXXXXX
330	JUST INPUT 12 TEXT HEADING	XXXXXXXXXXXXXXXX
331	JUST INPUT 13 TEXT HEADING	XXXXXXXXXXXXXXXX
332	JUST INPUT 14 TEXT HEADING	XXXXXXXXXXXXXXXX
333	JUST THE INPUT 0 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY

333 in which YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY are 32 characters of the input 0 text contents; just the entered characters are printed, from left to right.

334	JUST THE INPUT 1 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
335	JUST THE INPUT 2 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
336	JUST THE INPUT 3 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
337	JUST THE INPUT 4 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
338	JUST THE INPUT 5 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
339	JUST THE INPUT 6 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
340	JUST THE INPUT 7 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
341	JUST THE INPUT 8 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
342	JUST THE INPUT 9 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
343	JUST THE INPUT 10 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
344	JUST THE INPUT 11 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
345	JUST THE INPUT 12 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
346	JUST THE INPUT 13 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
347	JUST THE INPUT 14 TEXT CONTENTS	YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
348	INPUT 0 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T

348 in which XXXXXXXXXXXXXXXX are 16 characters of the heading and YYYYYYYYYYYYYYYY are 32 characters of the input 0 text contents, just the entered characters are printed, from left to right.

349	INPUT 1 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
350	INPUT 2 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
351	INPUT 3 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
352	INPUT 4 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
353	INPUT 5 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
354	INPUT 6 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
355	INPUT 7 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
356	INPUT 8 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
357	INPUT 9 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
358	INPUT 10 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
359	INPUT 11 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
360	INPUT 12 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
361	INPUT 13 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
362	INPUT 14 TEXT	XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
363	DATE	DD/MM/YY + T
364	TIME	HH:MM + T
365	DATE TIME	DD/MM/YY**b**HH:MM + T
366	FOLLOWING MACRO TERMINATOR SKIPS	
367	JUST GENERAL TOTAL WEIGHS	XXXXXX

367 the field expands from right to left with many spaces for completing the field length.

368	JUST NET GENERAL TOTAL	XXXXXXXXXX
369	HEADING 1	XXXXXXXXXXXXXXXXXXXXXXXX

369 in which XXXXXXXXXXXXXXXX are the 24 characters of the first line of the heading; just the entered characters

are printed, from left to right.

370	HEADING 2	XXXXXXXXXXXXXXXXXXXXXX
371	HEADING 3	XXXXXXXXXXXXXXXXXXXXXX
372	JUST GROSS ON 10 DIGITS	XXXXXXXXXX
373	JUST NET ON 10 DIGITS	XXXXXXXXXX
374	PRINT EMPTY LINE	+ T
375	PRINTS A SPACE	**b**
376	SCALE UNIT OF MEASURE	UM + T
377	DATABASE UNIT OF MEASURE	UM + T
378	TICKET PROGRESSIVE	XXXXX

(progressive number that is increased with each input/output weighing cycle and upon each single weigh)

379	LOT PROGRESSIVE	XXXXXX

(number of general total resettings)

380	JUST WEIGHS PARTIAL TOTAL	XXXXX
381	JUST NET PARTIAL TOTAL	XX…X
382	JUST WEIGHS GRAND TOTAL	XXXXXXXX
383	JUST NET GRAND TOTAL	XX…X
384	ONLY TARE VALUE	XXXXXXXXX
385	STANDARD KD PROTOCOL STRING	
386	AF0X PROTOCOL STRING	

Through the blocks 385 and 386 it is possible to print the STANDARD or AFXX serial string (see section "TRANSMISSION PROTOCOLS" for the description); the terminator of the string depends on the setting of the **SEtuP >> SEriAL >> tErMin** step of the SET-UP environment (CR or CRLF or no terminator).

387	PRINTS SET TERMINATOR	CR or CRLF or NO TERMINATOR
388	RELEASES PAPER FOR TM295	
389	ACTIVATES PAPER PRESENT SENSOR FOR TM295	
390	ACTIVATES TIMEOUT FOR TM295	
391	END PAGE UPSIDE DOWN FOR TM295	

This command causes the ticket to be expelled in the insertion area.

392	ACTIVE SCALE NUMBER	SCALE**b**NUMBER**bbbb**X + T

in which X is the active scale number.

393	JUST ACTIVE SCALE NUMBER	X

in which X is the active scale number.

394	JUST NUMBER OF ALIBI MEMORY REWRITINGS	XXXXX

the field expands from right to left; the non significant zeros will be printed anyways.

395	LAST NET WEIGHT ON ALIBI MEMORY	XXXXXXXXXX
396	ACTIVE SCALE NUMBER WITH ALIBI MEMORY	XX
397	PRINTS WEIGH ID	XXXXXX

In which XXXXXX is the ID weighing on 6 digits; expanding from left to right.

398	ALIBI MEMORY UNIT OF MEASURE	UM

this block prints the unit of measure of the weigh saved in the alibi memory.

399	LAST GROSS WEIGHT ON ALIBI MEMORY	XXXXXXXXXX

in which XXXXXXXXXX indicates the weight value in 10 digits including the comma.

400	CANCELLATION OF FREE TEXT CONTENTS	

After their printing, ALL the contents of the free texts present are cancelled.

401	LAST TARE ON ALIBI MEMORY	PTXXXXXXXXXX
402	PRINTS TERMINATOR	CR or CRLF or NO TERMINATOR
403	PRINT CALCULATED DATA	XXXXXXXXXX
404	PRINT FIRST ENTERED DATA	XXXXXX
405	PRINTS SECOND ENTERED DATA	XXXXXX
406	PRINTS OPERATION SYMBOL	X

In which X is "+" in case of addition, "-" in case of subtraction, "x" in case of multiplication..
The 403, 404, 405 and 406 blocks refer to the operation executed with the "calculator" function described in section "CALCULATOR", **USER MAN.REF.**.

407	SCALE 1 WEIGHT	SCALE**bbbbbb**1XXXXXXXXUM

The macro is printed if scale 1 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

| 408 | ONLY SCALE 1 WEIGHT | XXXXXXXX |
| 409 | SCALE 2 WEIGHT | SCALE**bbbbbb**2XXXXXXXXUM |

The macro is printed if scale 2 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

| 410 | ONLY SCALE 2 WEIGHT | XXXXXXXX |
| 411 | SCALE 3 WEIGHT | SCALE**bbbbbb**3XXXXXXXXUM |

The macro is printed if scale 3 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

| 412 | ONLY SCALE 3 WEIGHT | XXXXXXXX |
| 413 | SCALE 4 WEIGHT | SCALE**bbbbbb**4XXXXXXXXUM |

The macro is printed if scale 4 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

| 414 | ONLY SCALE 4 WEIGHT | XXXXXXXX |
| 415 | WEIGHT SUM ACTIVE SCALE | SUM   **b**XXXXXXXXUM |

The macro is printed if the sum of the scales is displayed.

416	ONLY WEIGHT SUM FOR ACTIVE SCALES	XXXXXXXX
417	ONLY WEIGH TEXT	"WEIGH**bbbbb**"
418	ONLY WEIGHS TEXT	"WEIGHS**bbbb**"
419	ONLY PARTIAL TOTAL TEXT	"PARTIAL TOTAL"
420	ONLY GENERAL TOTAL TEXT	"GENERAL TOTAL"
421	ONLY GRAND TOTAL TEXT	"GRAND TOTAL"
422	ONLY TOTAL TEXT	"TOTAL**bbbbb**"
423	ONLY GROSS TEXT	"GROSS**bbbbb**"
424	ONLY NET TEXT	"NET**bbbbbbb**"
425	ONLY TARE TEXT	"TARE**bbbbbb**"
426	ONLT PT TEXT	"PT**bbbbbbbb**"
427	ONLY AXLE TEXT	"AXLE**bbbb**"
428	"PLA.TXT" CONDITIONED DESCRIPTION	XXXXXXXXXX

It is printed the description that has been inserted on step **PLA.txt**. Only the characters inserted from left to right are printed

429	ONLY VEHICLE TEXT	"VEHICLE**b**"
430	PRINT X COORDINATE SCALE 1	X1XXXXXXXXXX+UM
431	ONLY X COORDINATE VALUE SCALE 1	XXXXXXXX
432	PRINT Y COORDINATE SCALE 1	Y1XXXXXXXXXX+UM
433	ONLY Y COORDINATE VALUE SCALE 1	XXXXXXXX
434	PRINT X COORDINATE SCALE 2	X2XXXXXXXXXX+UM
435	ONLY X COORDINATE VALUE SCALE 2	XXXXXXXX
436	PRINT Y COORDINATE SCALE 2	Y2XXXXXXXXXX+UM
437	ONLY Y COORDINATE VALUE SCALE 2	XXXXXXXX
438	PRINT X COORDINATE SCALE 3	X3XXXXXXXXXX+UM
439	ONLY X COORDINATE VALUE SCALE 3	XXXXXXXX
440	PRINT Y COORDINATE SCALE 3	Y3XXXXXXXXXX+UM
441	ONLY Y COORDINATE VALUE SCALE 3	XXXXXXXX
442	PRINT X COORDINATE SCALE 4	X4XXXXXXXXXX+UM
443	ONLY X COORDINATE VALUE SCALE 4	XXXXXXXX
444	PRINT Y COORDINATE SCALE 4	Y4XXXXXXXXXX+UM
445	ONLY Y COORDINATE VALUE SCALE 4	XXXXXXXX
446	PRINY X COORDINATE BARYCENTRE	XgXXXXXXXXXX+UM
447	ONLY X COORDINATE VALUE BARYCENTRE	XXXXXXXX
448	PRINT Y COORDINATE BARYCENTRE	YgXXXXXXXXXX+UM
449	ONLY Y COORDINATE VALUE BARYCENTRE	XXXXXXXX

450	PRINT DATE AND TIME WEIGHS ON THE WEIGHS LIST	HH:MM**b**GG/MM/AA + T

The date and the time of the acquired weight is printed in the weighing list.

451	CURRENT LIST WEIGHS' COUNTER	XXXX

The field is expressed in four digits, with some zeros to complete the field's length.

452	AXLE COUNTER CURRENT LIST	XXXX

the field is espresse on four digits, with the zeros for complete the field length.

453	PRINT AXLE WEIGHT ON THE WEIGHS LIST	AXLE**bbbb**XXXXYYYYYYYY+UM

In which XXXX indicates the axle number and YYYYYYYY the axle weight value weighed.

This block is printed on the list, only if there is an axle weigh.

454	PRINT WEIGHT SCALE 1 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

455	PRINT WEIGHT SCALE 2 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

456	PRINT WEIGHT SCALE 3 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

457	PRINT WEIGHT SCALE 4 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

458	NET PARTIAL TOTAL LIST	XXXXXXXXXX
459	GROSS PARTIAL TOTAL LIST	XXXXXXXXXX
460	TARE PARTIAL TOTAL LIST	XXXXXXXXXX
461	NET TOTAL LIST	XXXXXXXXXX
462	GROSS TOTAL LIST	XXXXXXXXXX
463	TARE TOTAL LIST	XXXXXXXXXX
464	1st DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

465	2nd DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

466	3rd DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

467	4th DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

468	5th DATABASE DESCRIPTION ON THE WEIGHS LIST	XXXXXXXXXXXXXXXXXXXX + T

in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.

469	JUST GROSS PARTIAL TOTAL	XXXXXXXXXX
470	TARE WEIGHT ON PARTIAL TOTAL	PT**bbbbbbbb**XXXXXXXXXXUM+T
471	ONLY THE INPUT 0 TEXT CONTENTS ON THE WEIGHS LIST	XXXXXXXXXX

Is print just the input 0 text contents; Are printed only the firsts 10 characters inserted.

472	ONLY THE INPUT 1 TEXT CONTENTS ON THE WEIGHS LIST	XXXXXXXXXX

Is print just the input 1 text contents; Are printed only the firsts 10 characters inserted.

473	ONLY THE INPUT 2 TEXT CONTENTS ON THE WEIGHS LIST	XXXXXXXXXX

Is print just the input 2 text contents; Are printed only the firsts 10 characters inserted.

474	ONLY THE INPUT 3 TEXT CONTENTS ON THE WEIGHS LIST	XXXXXXXXXX

Is print just the input 3 text contents; Are printed only the firsts 10 characters inserted.

475	ONLY SUM TEXT	XXXXXXXXXXX
476	ONLY SUM WEIGHT ON THE WEIGHS LIST	XXXXXXXX
477	ONLY WEIGHT SCALE 1 ON THE WEIGHS LIST	XXXXXXXX
478	ONLY WEIGHT SCALE 2 ON THE WEIGHS LIST	XXXXXXXX
479	ONLY WEIGHT SCALE 3 ON THE WEIGHS LIST	XXXXXXXX
480	ONLY WEIGHT SCALE 4 ON THE WEIGHS LIST	XXXXXXXX
481	ONLY VALUE TARE ON PARTIAL TOTAL	XXXXXXXXXX
482	SCALE 5 WEIGHT	SCALE**bbbbbb**5XXXXXXXXUM

The macro is printed if scale 5 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

483	ONLY SCALE 5 WEIGHT	XXXXXXXX
484	SCALE 6 WEIGHT	SCALE**bbbbbb**6XXXXXXXXUM

The macro is printed if scale 6 or the sum of scales is displayed.

The text of defalt display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

485	ONLY SCALE 6 WEIGHT	XXXXXXXX
486	SCALE 7 WEIGHT	SCALE**bbbbbb**7XXXXXXXXUM

The macro is printed if scale 7 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

487	ONLY SCALE 7 WEIGHT	XXXXXXXX
488	SCALE 8 WEIGHT	SCALE**bbbbbb**8XXXXXXXXUM

The macro is printed if scale 8 or the sum of scales is displayed.

The text of default display on the print will be "SCALE". For to set the description of the platforms that will be displayed on the print see the **PLA.txt** step.

489	ONLY SCALE 8 WEIGHT	XXXXXXXX
490	PRINT X COORDINATE SCALE 5	X5XXXXXXXXXX+UM
491	ONLY X COORDINATE VALUE SCALE 5	XXXXXXXX
492	PRINT Y COORDINATE SCALE 5	Y5XXXXXXXXXX+UM
493	ONLY Y COORDINATE VALUE SCALE 5	XXXXXXXX
494	PRINT X COORDINATE SCALE 6	X6XXXXXXXXXX+UM
495	ONLY X COORDINATE VALUE SCALE 6	XXXXXXXX
496	PRINT Y COORDINATE SCALE 6	Y6XXXXXXXXXX+UM
497	ONLY Y COORDINATE VALUE SCALE 6	XXXXXXXX
498	PRINT X COORDINATE SCALE 7	X7XXXXXXXXXX+UM
499	ONLY X COORDINATE VALUE SCALE 7	XXXXXXXX
500	PRINT Y COORDINATE SCALE 7	Y7XXXXXXXXXX+UM
501	ONLY Y COORDINATE VALUE SCALE 7	XXXXXXXX
502	PRINT X COORDINATE SCALE 8	X8XXXXXXXXXX+UM
503	ONLY X COORDINATE VALUE SCALE 8	XXXXXXXX
504	PRINT Y COORDINATE SCALE 8	Y8XXXXXXXXXX+UM
505	ONLY Y COORDINATE VALUE SCALE 8	XXXXXXXX
506	PRINT WEIGHT SCALE 5 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

507	PRINT WEIGHT SCALE 6 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

508	PRINT WEIGHT SCALE 7 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

509	PRINT WEIGHT SCALE 8 ON THE WEIGHS LIST	SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

7.4 BLOCKS WITH PARAMETERS

When entering the following blocks manually in a print ticket, these require that an additional numeric value be entered (specified in detail in the block's description) in order to define the print ticket which one wants to obtain.

EXAMPLE

Entry of the 600 "PRINT n TERMINATORS" block:

- Enter the 600 block in a ticket and confirm with OK/menu.
- The indicator does not pass by the block present in the following line, but shows "P   000".
- Enter a value between 001 and 050; for values outside this interval the indicator shows "-Error-", restoring the block before entering the block 600.
- By entering a valid value, the block will print a number of terminators equal to the one previously entered.

600	PRINTS n TERMINATORS	Values valid from 001 to 050
601	PRINTS n LF CHARACTERS	Values valid from 001 to 050
602	PRINTS n TAB CHARACTERS	Values valid from 001 to 050
603	PRINTS n SPACE CHARACTERS	Values valid from 001 to 050
604	PRINTS n "_" CHARACTERS	Values valid from 001 to 050
605	LEFT MARGIN FOR LX300	Values valid from 001 to 255
606	NET WEIGHT ON X DIGITS	Valid values in the **nXX** format
607	GROSS WEIGHT ON X DIGITS	Valid values in the **nXX** format
608	TARE WEIGHT ON X DIGITS	Valid values in the **nXX** format

in which **n** can be:
0　　　Value with decimal point and spaces
1　　　Value with decimal point and zeros in the place of spaces
2　　　Value without decimal point and zeros in the place of spaces

XX is the field length (maximum enterable value is 20); if the weight value is greater than the number of entered digits, the complete value is printed anyways.
################
EXAMPLE
With a weight value of 100.01, if one wants a length of 10 characters, in the three cases one will have:

```
Parameter      Result
010                100.01
110            0000100.01
210            0000010001
```
###############

609	PRINT DIRECTION FOR MASTER / SLAVE SYSTEM	Valid values **000, 001, 002**

000 → Prints only on the SLAVE.
001 → Prints only on the MASTER.
002 → Prints only on the indicator which is being used.

610　　SETTING THE THRESHOLD OF PRINT START OR THE NUMBER OF CHARACTERS TO BE PRINTED FOR THE INPUT TEXT CONTENTS OR MEMORY OR AI CODE DESCRIPTION　　　Values valid in the **nXX** format
This macro allows to define which part of the contents of an input text which is to be printed in the macro 616 or the part of AI code description on the block 611.

n can be:
0　　　for setting the threshold beginning;
1　　　for setting the characters to be printed.

XX is the threshold beginning if **n** = 0 or the characters to be printed if **n** = 1.

611　　PRINTING OR CLEARING AI CODE DESCRIPTION　　　Values valid in the **nXX** format
This macro allows to print a part of AI code description defined in the 610 macro or to clear the AI code description.
n can be:
0　　　to print;
1　　　to clear.

XX is the number of AI code (XX = 01 to print or clear the description of the AI code 0, XX=05 to print or clear the description of the AI code 4, XX=00 to clear all the desritions of the AI codes).

613　　SET FORMAT NUMBER OF COPIES　　　Values valid in the **XXX** format
This macro allows to print the format and a number of its copies equal to **XXX** parameter. The initial format macro is the macro following this.

################

EXAMPLE
If one wants to print Net Weight, Gross and Tare and then 11 copies.

613 >>> enter parameter 011
301 (Net weight)
302 (Gross weight)
303 (Tare weight)

….
################

614   SET RELAY FUNCTIONING   Values valid in the **nXX** format
In which **n** is the relay status:
0   OFF
1 or 2   ON

XX is the number of the relay to be enabled, from 00 to 10.

If one needs to manage various printers using the available relays (connecting the transmission of the printer port on the common of the relays), follow the example below:

PRINTING OF THE NET WEIGHT ON RELAY 1, GROSS ON RELAY 2, TARE ON RELAY' 3.

…
614 >>> enter parameter 100 (Relay 1 ON)
614 >>> enter parameter 001 (Relay 2 OFF)
614 >>> enter parameter 002 (Relay 3 OFF)
301 (Net weight)
317 (Forces printing)
614 >>> enter parameter 000 (Relay 1 OFF)
614 >>> enter parameter 101 (Relay 2 ON)
614 >>> enter parameter 002 (Relay 3 OFF)
302 (Gross weight)
317 (Forces printing)
614 >>> enter parameter 000 (Relay 1 OFF)
614 >>> enter parameter 001 (Relay 2 OFF)
614 >>> enter parameter 102 (Relay 3 ON)
303 (Tare weight)
317 (Forces printing)

…

615   CONVERSION OF THE "." (POINT) CHARACTER IN THE "," (COMMA) CHARACTER
IN THE PREVIOUS X DIGITS   Values valid in the **XX** format
NOTE: if one uses the 615 block, one should enter the block 317 "FORCES PRINTING" before the blocks that need to be converted.
################
EXAMPLE

…
317   (Forces printing)
301   (Net weight)
615 >>> parameter 20   (Conversion of the "." (point) character in the "," (comma)

….
The net weight value will be printed with the comma instead of with the point.
################

616   PRINTING OR CLEARING INPUT TEXT CONTENTS   Values valid in the **nXX** format
This macro allows to print a part of an input text content defined in the 610 macro or to clear the contents of the input text content.

n can be:
0　　　　to print;
1　　　　to clear.

XX is the number of the input text (XX = 01 to print or clear 0 text contents of input 0, XX=05 to print or clear the contents of the text of input 14, XX=00 to clear all the contentx of the input texts).

617　　SETTING THE ALIGNMENT AND NUMBER OF FORMATTING CHARACTERS　　　Values valid in the **nXX** format
This macro, followed by 618, allows to align to the right or to the left, the contents of the following macro in regards to the defined number of characters.

n can be:
0　　　　to set the alignment to the right
1　　　　to set the alignment to the left

XX is the number of formatting characters.

See the example in the 618 macro.

618　　SETTING THE FILLING CHARACTER OF THE FOLLOWING MACRO　　　　Values valid in the **XXX** format
This macro allows to set the filling character of the following macro.

XXX corresponds to the ASCII decimal character (from 001 to 255).

################
EXAMPLE
If one wants to print on the right the contents of the 392 macro (NUMBER OF ACTIVE SCALE) one puts the "-" character (ASCII decimal 045) as filling on the left.

The macro contains 17 characters; therefore if the print line is 24 one should set the following macros:

…
617 >>> enter parameter 024
618 >>> enter parameter 045
392　　　(Active scale number)
….
################.

619　　CONFIRMATION "WAIT" FROM PC OR BY PRESSING OF **C** KEY　　　　Values valid in the **XXX** format
This macro allows to block the indicator and view the message "WAIT" on the LED display, after having forced the printing of the previous macros, and waiting for the character confirming that the reception has been made by the PC. In any case it's possible to unlock the indicator by pressing the **C** key.
Once unlocked, the indicator will print the eventual following macros.
XXX corresponds to the ASCII decimal character to be received in order to unlock the indicator (from 001 to 255, or 000 in case one wants to wait for the "PCOK" command).

NOTE: It's possible to enter more than one confirmation "wait" in the same print format.

################
EXAMPLE
One wants to lock the indicator after printing a series of data; then one waits for the "-" confirmation character (ASCII decimal 045) and, once received, transmit other data.

One should set the following macros:

…
301
302
303
619 >>> enter parameter 045　　　　　Setting the wait of the "-" character (ASCII decimal 045)
304

305
306
…
################

620   SET VALUE OF THE ACCUMULATOR   Values valid in the **XXX** format
        in which **XXX** can be:
        000   Net weight.
        001   Gross weight.
        002   Tare weight.
        003   Not used
        004   Net partial total
        005   Net general total
        006   Net grand total
        007   Not used
        008   Partial gross total
        009   General gross total
        010   Gross grand total
        011   Not used
        012   Partial tare total
        013   Tare general total
        014   Tare grand total
        015   Weighs' material total
        016   Weighs' partial total
        017   Weighs' general total
        018   Weighs' grand total
        019   Not used
        020   Additional partial total
        021   Additional general total
        022   Additional grand total
        023   Weight scale 1
        024   Weight scale 2
        025   Weight scale 3
        026   Weight scale 4
        027   Sum weight active scale
        028   X Coordinate scale 1
        029   Y Coordinate scale 1
        030   X Coordinate scale 2
        031   Y Coordinate scale 2
        032   X Coordinate scale 3
        033   Y Coordinate scale 3
        034   X Coordinate scale 4
        035   Y Coordinate scale 4
        036   X Coordinate barycentre
        037   Y Coordinate barycentre
        038   Tare on total
        039   Switch the set value with the comparison one (see Attached Macro)

621   SETS VALUE DECIMALS   Values valid in the **XXX** format
        in which **XXX** can be:
        000   No decimal
        001   1 decimal
        002   2 decimals
        003   3 decimals
        004   4 decimals
        NOTE: if no decimals are set, the ones of the scale are used.

622   SETS CONVERSION VALUE UNIT OF MEASURE   Values valid in the **XXX** format
in which **XXX** can be:
000   g
001   kg
002   t
003   lb
NOTE: if no unit of measure has been set, the one of the scale is used.

623   PRINTS VALUE LOADED   Values valid in the **nXX** format
In which **n** can be:
0   Value with decimal point and spaces
1   Value with decimal point and zeros in the place of spaces
2   Value without decimal point and zeros in the place of spaces

XX is the length of the field (maximum enterable value is 20); if the weight value is greater than the number of entered digits, the complete value is printed anyways.
#################
EXAMPLE
The scale is with three decimals and the unit of measure is the kg; one wants to print the net weight with two decimals converted in pounds, expressed in 7 digits without decimal points, with non significant zeros filling in the eventual spaces present.
One should set the following macros:

…
620 >>> enter parameter 000
621 >>> enter parameter 002
622 >>> enter parameter 003
623 >>> enter parameter 207

….
If the net weight of the scale corresponds to 2,480 kg, the printed value will be **0000547**
################

624   SETS THE VALUE OF THE SETPOINT IN THE MACRO 620   Values valid in the **XXX** format

Parameter	ON Threshold (setpoint)
===========	====================
000 ~ 003	rL.1 ~ 4
004 ~ 015	rL.5 ~ 16
Parameter	OFF Threshold (setpoint)
===========	====================
016 ~ 019	rL.1 ~ 4
020 ~ 031	rL.5 ~ 16

627   FORCES PRINTOUT AND TIME WAIT   Values valid in the **XXX** format
Besides the force printout function, it waits also a period of time.

XXX   Wait time (max 200dsec); for example "001" is equal to 0,1 seconds; "010" equals to 1 second.

640   EAN/UCC CHECKDIGIT ON X PREVIOUS DIGITS   Values valid in the **XX** format

641   SETS THE VALUE FOR ENABLE OR DISABLE PRINT TERMINATOR   Values valid **000 or 001**
000→ Enable print terminator of the macros
001→ Disable print terminator of the macros
If the parameter of the macro 641 is set as 001, it's not possible to print two consecutive print terminators, entered as ASCII characters 13 (CR), 10 (LF) or 13 10 (CRLF) (for example, if in a print format there are two consecutive CR terminators, only one of them will be printed).

642 SIMULATES THE PRESSURE OF A KEY
- 0xx simulates the pressure of the key with xx code.
- 1xx simulates the long pressure of the key with xx code.

CODE	PRESSED KEY
00	**F1** key
01	**F2** key
02	**F3** key
03	**F4** key
04	**F5** key
05	**F6** key
06	**F7** key
07	**F8** key
08	**F9** key
09	**F10** key
10	Numeric key **'0'**
11	Numeric key **'1'**
12	Numeric key **'2'**
13	Numeric key **'3'**
14	Numeric key **'4'**
15	Numeric key **'5'**
16	Numeric key **'6'**
17	Numeric key **'7'**
18	Numeric key **'8'**
19	Numeric key **'9'**
20	Dot key **(.)**
21	**ZERO** key
22	**Fn/ENTER** key
23	**2nd F** key
24	**C** key

643 WAIT THE PRESSURE OF A KEY
- 0xx set the visualization of WAIT message and "block" the instrument, it remain on waiting of the pressure of the key with xx code.
- 1xx "block" the instrument, it remain on waiting of the pressure of the key with xx code.

644 WAIT THE STATUS OF THE INSTRUMENT
- 0xx set the visualization of WAIT message and "block" the instrument, it remain on waiting of xx status.
- 1xx "block" the instrument, it remain on waiting of xx status.

645 SET THE LEVEL OF THE FUNCTION
0xx set the menu level of the function that one want to perform.

646 SET THE FUNCTION
0xx set the code of the function that one want to perform.
Example:
To execute the function 311 is necessary insert in the format the macro 645 with 003 parameter (that set the menu level) and the macro 646 with 011 parameter (number of the function).

647 REDIRECTION OF THE PRINT   Values valid **000**, **001** or **002**
- 000 print on Print port
- 001 print on Pc port
- 002 print on Aux port

Note: parameter 255 forces printing.

648   SET ACCUMULATOR WITH PRINT BUFFER VALUE OR   Values valid in the **nXX** format
         DECREASE PRINT BUFFER

In which **n** can be:

0   sets the accumulator with the character that is in the following position of the print buffer:
     current position – XX characters; the character will be stored in ASCII decimal code.

1   decreases the print buffer of XX characters

################
EXAMPLE

One wants to get only the number of the active scale from the macro 392 ("ACTIVE SCALE NUMBER") and set it in the accumulator (in ASCII decimal value), without printing.
One should set the following macros:

…
392
648 >>> enter parameter 002   (sets the number of the scale in the accumulator)
648 >>> enter parameter 118   (decreases the print buffer of 18 characters)

…
###############

649   REDIRECTION BUFFER   Values valid in the **XXX** format

In which **XXX** can be:

001   inserts in the redirection buffer all the data that follow the macro and prints them
002   inserts in the redirection buffer all the data that follow the macro (without printing them)
003   prints the data of the redirection buffer
004   cancels all the data in the buffer

################
EXAMPLE

One wants to repeat through the **2ndF** + **F5** function the printout of both the formats "wheels weigh totalization (S.F.05)" and "vehicle end partial total (S.F.08)".
One should set the following macros:

649 >>> enter parameter 004
649 >>> enter parameter 002   Printout format S.F.05
 …..

 ….
317
316   Printout format S.F.08
649 >>> enter parameter 003
317
300

8. DISPLAY CUSTOMIZATION

It's possible to program the lines of the customizable display. In each line up to 22 characters can be displayed.
The print format that allows to program the customizable display is the number 99.
The terminator to be used in this format must be CR.
One can configure this format through the Dinitools™ software (for the management of the print formats, see the manual of the software).
The programming of the lines of the display can be executed by using the print macros described in the sections "LIST OF PRINT BLOCKS" and "BLOCKS WITH PARAMETERS".

9. ELECTRICAL SCHEMES

9.1 MOTHER BOARD
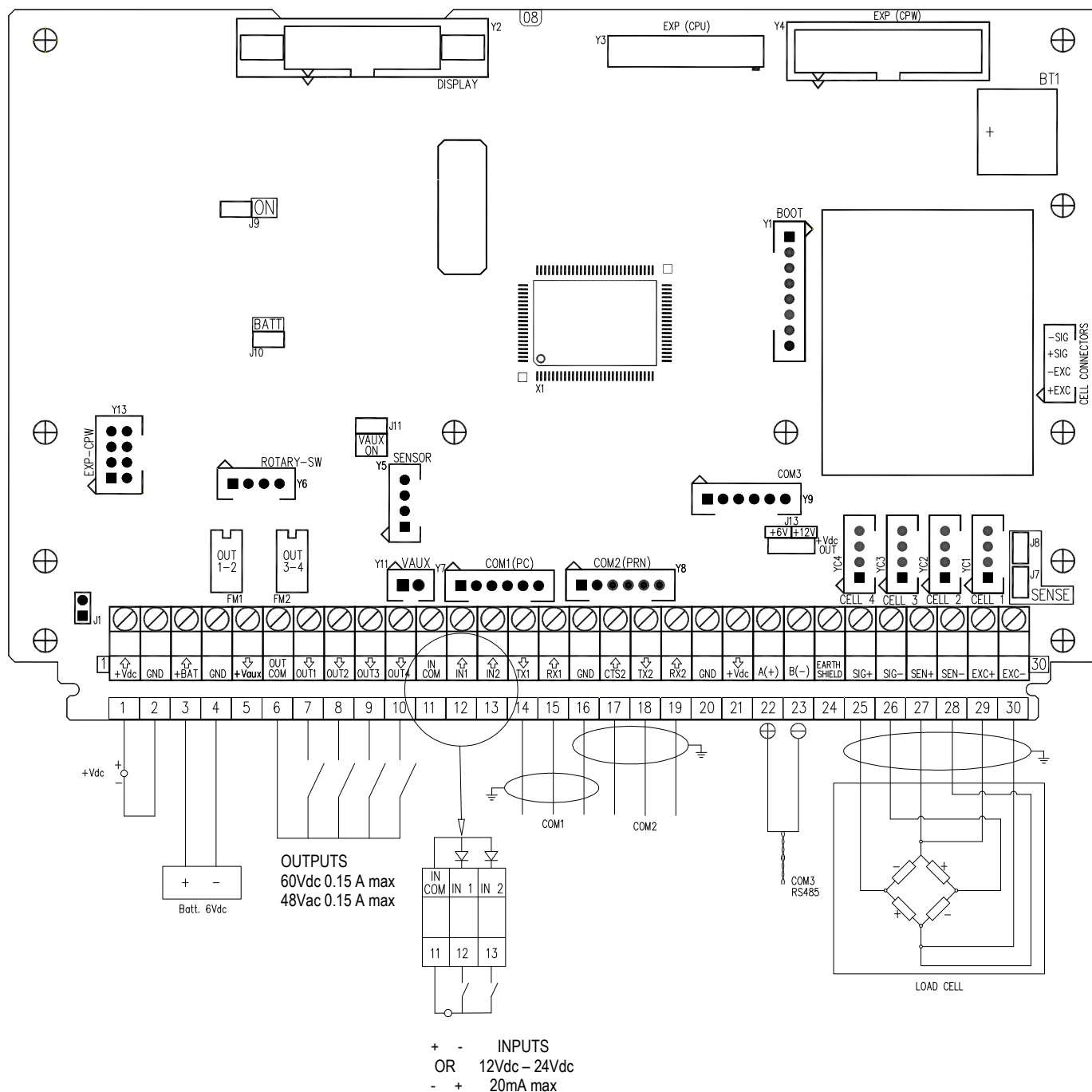
J9 (ON):
- If closed, one can automatically turn on the instrument as soon as the power voltage is supplied; one must also turn off the instrument by removing the mains voltage.
- If open, one can turn the instrument on and off by just pressing the ON key.

J7, J8 (SENSE): if closed, REFERENCE + and POWER SUPPLY +, REFERENCE - and POWER SUPPLY – are jumpered on the board.

J1: if open, it enables the access to the metrological parameters, when configuring.

J11 (VAUX ON): if closed, the Vaux is always powered, independently of the "PWr.Prn" parameter of the SET-UP ENVIRONMENT.

J13(+VdcOUT):   allows selecting the power voltage (+6V, +12V) of terminal board **21**(**+Vdc**) output.
By selecting **+6V** the battery must be connected on terminal 3 and 4
By selecting **+12V** the external power supply must be connected on terminal 1 and 2

Therefore one has to verify if the battery or the external power supply is necessary for the required output, otherwise no voltage will be supplied on the terminal 21.

SERIAL PORTS (refer to section "SERIAL OUTPUTS")

COM 1	COM 2	COM 3
Y7 AMP Connector: 232 serial	Y8 AMP Connector: 232 serial	Y9 AMP Connector: 232 serial
14-15-16 Terminal: 232 serial	16-17-18-19 Terminal: 232 serial	22-23 Terminal: 485 serial

IMPORTANT:
In the case of RS485 connection, read carefully and apply what is described in chapter "RS 485 CONNECTION".
In the case of digital load cells connection, read carefully and apply what is described in chapter "DIGITAL LOAD CELLS".

POWER SUPPLY

6 Vdc BATTERY POWER SUPPLY	+Vdc (IN) POWER SUPPLY	V-AUX AUXILIARY POWER SUPPLY	+Vdc (OUT) POWER SUPPLY
4 GND (0 Vdc) 3 +BAT (+ 6 Vdc)	2 GND (0 V) 1 +Vdc (+12V, 8 ÷ 24 Vdc with I/O expansion board connected)	4 GND (0 V) 5 +Vaux (5,3 – 8 Vdc 400 mA max)	20 GND (0 V) 21 +Vdc (+6V or +12V, see J13 jumper description above)

CELL: LOAD RECEIVER (terminal board connection)

25	**SIG +**	SIGNAL +
26	**SIG -**	SIGNAL -
27	**SEN +**	SENSE +
28	**SEN -**	SENSE -
29	**EXC +**	EXCITATION +
30	**EXC -**	EXCITATION -

INPUTS (OPTOISOLATOR PHOTOCOUPLERS)
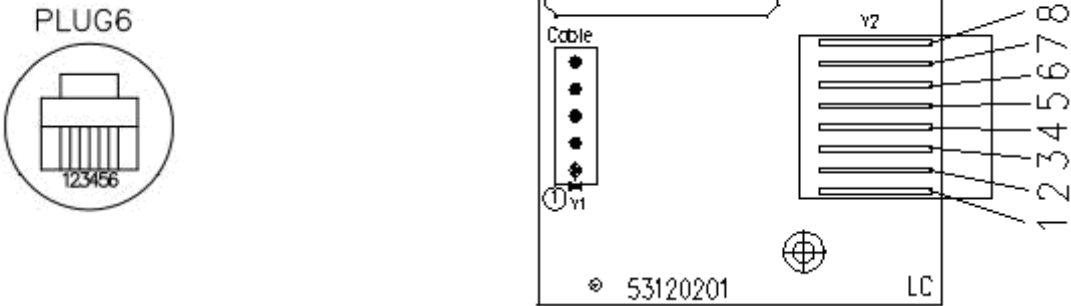Power supply: 12 Vdc ÷ 24 Vdc, max 20 mA.

OUTPUTS (OPTOISOLATOR PHOTOMOSFET)
Maximum power: 48 Vac or 60 Vdc, 150 mA max, 10 Ω max.

!! IMPORTANT !!

The input/output optoisolation is obtained by feeding the input and/or output common using a voltage external the instrument.

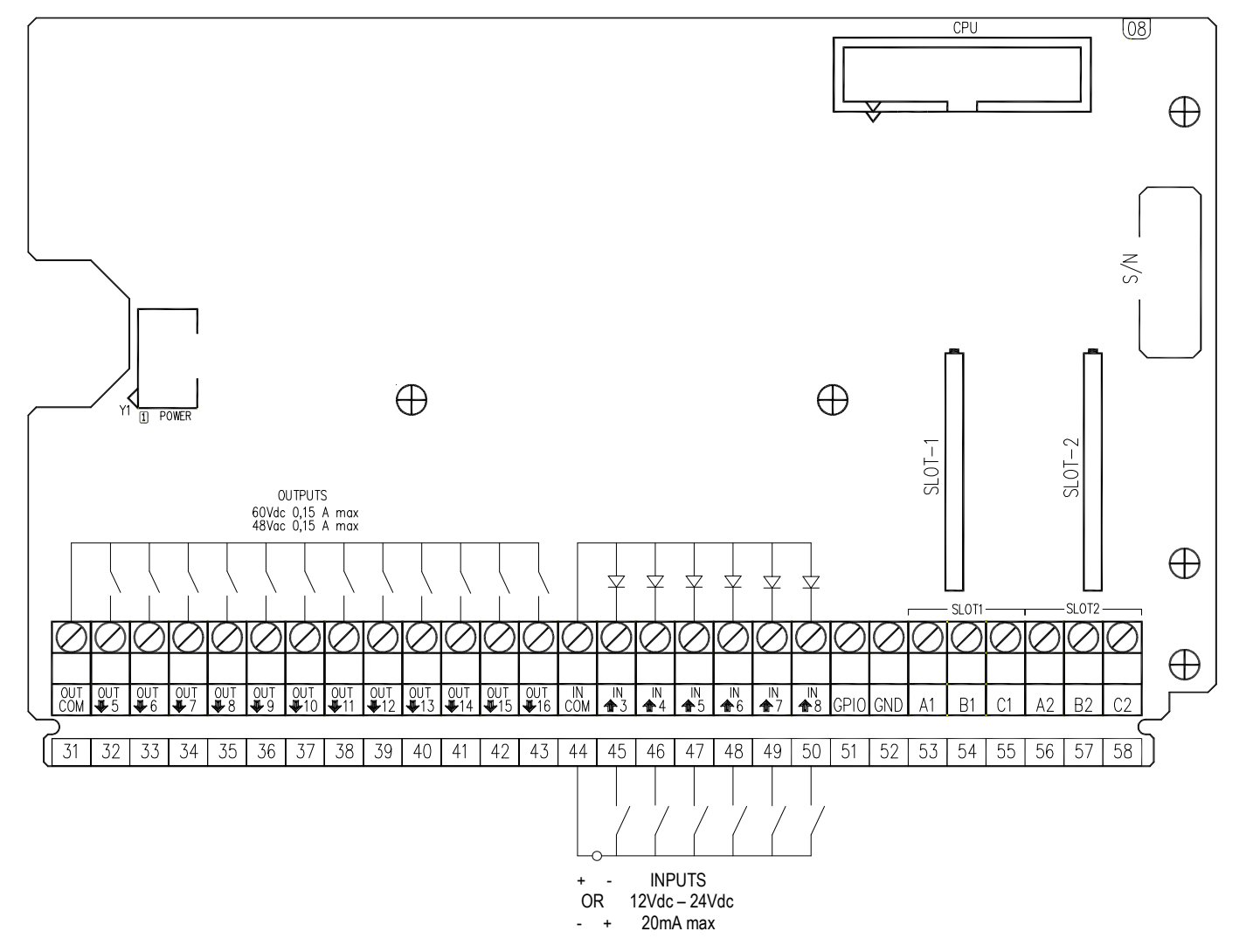**RS232 SERIAL PORT (RJ45 CONNECTOR) (*)**

PLUG6 CONNECTIONS:

Y2	PLUG6	DB9	COLOUR	MEANING
1				
2	1		ORANGE-WHITE	
3	2	3	BLUE-WHITE	RX
4	3		BROWN	
5	4	5	GREEN-WHITE	GND
6	5	2	ORANGE	TX
7	6		WHITE-BROWN	
8				

(*) May be present depending on the model.

9.2 I/O EXPANSION BOARD (optional)

ANALOGUE OUTPUT

I/O1 (SLOT 1):		I/O2 (SLOT 2):	
53 I+ (A1)	+ 20 mA	56 I+ (A2)	+ 20 mA
54 COM- (B1)	0 mA / V	57 COM- (B2)	0 mA / V
55 V+ (C1)	+ 10 V	58 V+ (C2)	+ 10 V

Note: the maximum resistance applicable on the analogue output configured in current is 350 Ω and the minimum resistance applicable on the analogue output configured in voltage is 10 kΩ.
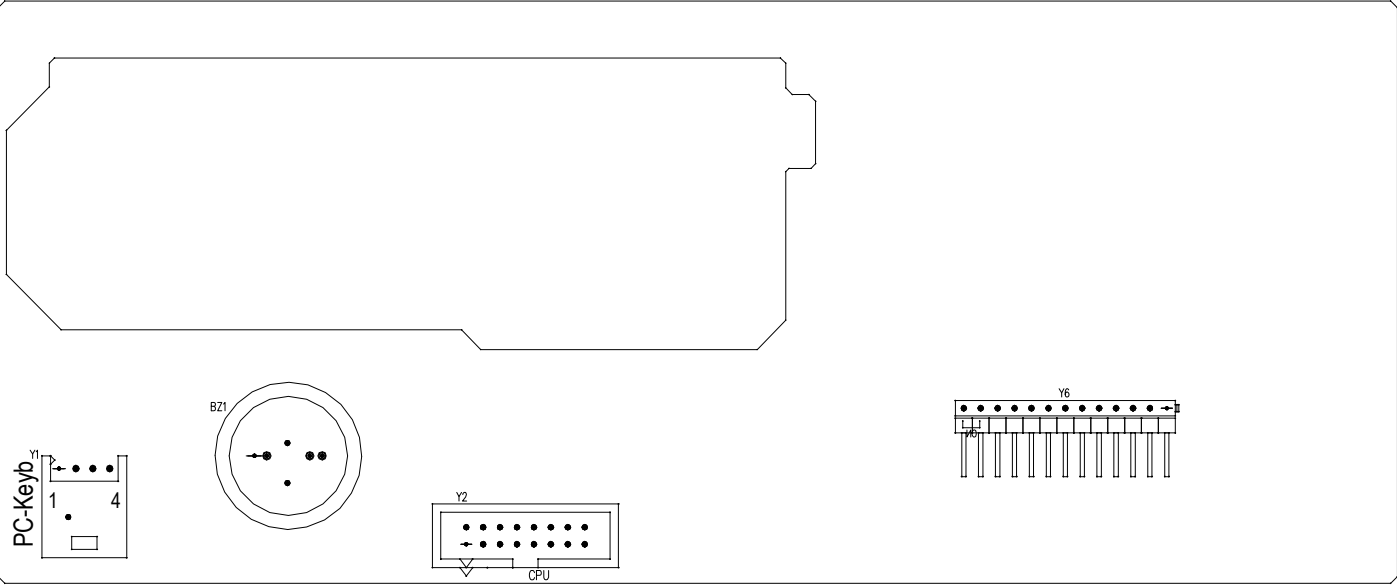
INPUTS (OPTOISOLATOR PHOTOCOUPLERS)
Power supply: 12 Vdc ÷ 24 Vdc, max 20 mA.

OUTPUTS (OPTOISOLATOR PHOTOMOSFET)
Maximum power: 48 Vac or 60 Vdc, 150 mA max, 10 Ω max.

!! IMPORTANT !!

The input/output optoisolation is obtained by feeding the input and/or output common using a voltage external the instrument.

9.3 DISPLAY BOARD

PC-Keyb – PC KEYBOARD CONNECTOR
Keyboard emulation input, usable for the connection of the instrument to the PC keyboard or the badge/bar code reader.

PC-KEYB		PS/2
1	+5V	4
2	GND	3
3	DATA	1
4	CLK	5